

**APPLICATION OF E-LEARNING IN HIGHER LEARNING
INSTITUTIONS**

**A CASE OF THREE SELECTED UNIVERSITIES IN MOROGORO
REGION (MZUMBE UNIVERSITY, SOKOINE UNIVERSITY AND
JORDAN UNIVERSITY COLLEGE)**

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JORDAN UNIVERSITY COLLEGE)**

By

WILLY A INNOCENT

**A Dissertation Submitted to the School of Public Administration and Management
in Partial Fulfilment of the requirements for the Award of the Degree of Master of
Public Administration (MPA) of Mzumbe University**

2016

CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University a dissertation entitled “**Application of e-Learning in HLIs in Tanzania**” **The case of HLIs in Morogoro region**, in partial/fulfillment of the requirements for award of the degree of Master of Public Administration of Mzumbe University.

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DECLARATION AND COPYRIGHT

I, **Willy Innocent**, declare that this dissertation is my own original work and that has not been presented and will not be presented to any other university for similar or any other degree award.

Signature

Date.....

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DEDICATION

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LIST OF ABBREVIATION

CAE	-	Computer-Aided Education
DOI	-	Diffusion of Innovation theory
E-Learning	-	electronic Learning
ESDP	-	Education Sector Development Programme
HLIs	-	Higher Learning Institutions
I T/IS	-	Information Technology/Information System
ICT	-	Information Computer Technology
ISPs	-	Internet Service Providers
LAN	-	Local Area Network
LCMS	-	Learning Content Management System
MoEVT	-	Ministry of Education and Vocational Training
SPSS	-	Statistical Packages for Social Scientists
TAM	-	Technology Acceptance Model
TCRA	-	Tanzania Communication Regulatory Authority
TCU	-	Tanzania Commission of Universities
VCRs	-	Virtual Class Rooms
WBT	-	Web Based Training

ABSTRACT

The aim of this study was to assess the application of e-Learning in HLIs in Tanzania. Specifically the study aimed at identifying the e-learning services available in HLIs, determining the relationship between the learners, instructors and application of e-learning in teaching and learning process as well as identification of challenges on the application of e-learning in HLIs. The data for this study were collected using questionnaire from Mzumbe University, Sokoine University as well as Jordan University from Morogoro region. A sample size of ninety (90) respondents comprising of thirty(30) tutors/ instructors and sixty(60) learners/ students were used in this study. Both probability and non probability sampling techniques were used in establishing a sample size of ninety respondents. Under probability sampling technique, a simple random sampling was used while under non probability sampling the purposive sampling technique was used. The data collected were analyzed both qualitatively and quantitatively as well as descriptive statistics such as mean and standard deviations were used to present the findings obtained. The research findings reveal that among the challenges toward effective application of e-Learning in HLIs in teaching and learning process include: inconsistent power supply, insufficient internet connectivity, few expect to support the e-learning users in HLIs, computer illiterate for some students, inadequate ICT infrastructures, financial constraints in terms of operating cost of internet services and shortage of computer in computer lab, poor government support (financially). Therefore application of e-Learning to be effective there is need for multiple initiatives from Tanzania Commission University (TCU) should encourage and motivate instructors and learners to use e-learning in their learning context, formulating partnership with international agencies which will support to invest in ICT facilities as well as MoEVT should shape education curriculum enable the learners since they are in primary school to have computer knowledge., equal budget allocation on ICT matters in HLIs, there is need for more investment in infrastructure, seminars and courses for learners and instructors/ tutors on e-learning use.

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CHAPTER ONE

INTRODUCTION AND OVERVIEW OF THE STUDY

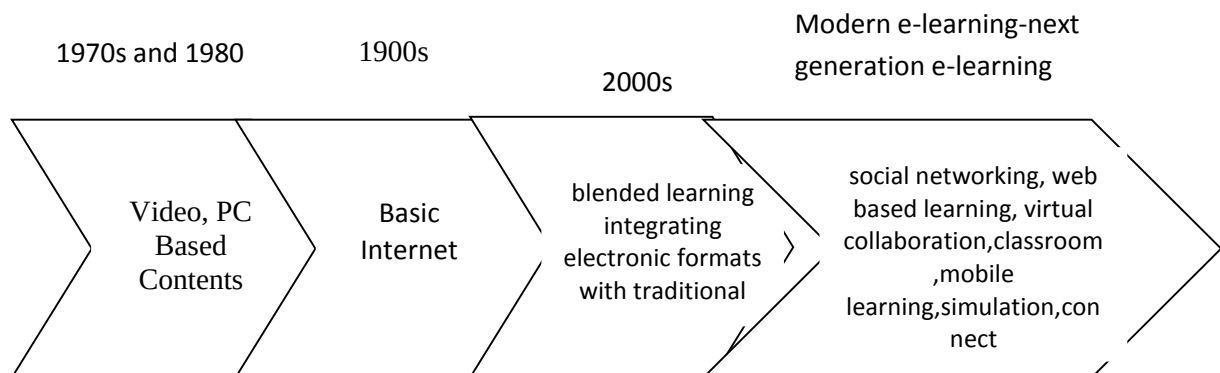
1.0 Introduction

This study sought to assess the application of e-Learning in HLIs. This section covers the background of the problem, statement of the problem, research objectives as well as the research questions guiding the study. The significance of the study, scope and delimitation as well as the justification of the study is also presented in this chapter.

1.1 Overview of e-Learning

According to Namisiko et al, (2014) e-Learning have continue to gain prominence in education sector due to the technological innovation such as free open source software and web 2.0. The e-learning technology in education involves the use of various teaching media which provides text such as animation, streaming video, image, audio. Moreover, it entail the incorporation of technology application and process such as tape, satellite TV, CD-ROM and computer based learning as well as local extranet/internet all the way via web-based learning. ICT system usually improves either by free standing or based on either local network during learning processes.

Figure 1.1 Evolution of e-Learning (Source Alshaher, 2013)



1.2 Background to the Problem

Recently, the application of e-Learning in higher education has gained its importance from the first and third world nations in the world. Majority of HLIs from various nations in the world have adopted E-learning as ways of enhancing teaching and learning. The e-Learning manner of higher education today finds their heredity in conventional distance. At first, e-learning was initiated for the sake of permitting popular who are dwelling in rural area to enable them to have access with higher education as well promote distance learning. All these situations have been influenced by technological innovation (Huynh, Umesh and Valanchich , (2003). Since then, E-Learning has been adopted by both developed and developing nations although the extent of adoption differs between them.

Various developed nations have adopted various e-learning in their educational system as means to improve their learning processes in HLIs. For instance, the use of Computer-Aided Education (CAE) Project computers was first introduced to Turkish education institutions in general between 1984 and 1986 (Ozar&Askar, 1997). The aim was to spread computer literacy and the use of computers as the measure to improve quality education through the use of ICT particularly e-learning. Thereafter, the government improved the curricula and instructional materials, revising student attainment investigation, instructors training, (Schware& Jaramillo, 1998). Thus, e-Learning in developed nations it is in secondary stage where most of majority are able to fulfil their education needs.

The study by Gaebel et al (2013) portrays that that HLIs from developed nations it applications it varies according one institutions and another the findings show that the numerous utilization of e-learning is established in sector such as business, management, education, teacher training as well as engineering and computers study. Nevertheless e-learning is found to be practised rarely in social science studies and law discipline. Twenty percent of HLIs mentioned their jus using it in all discipline.

The European Commission Report (2014) indicates that, while accommodating e-Learning in higher education institutions and, mainly, teaching staff are the main players in bringing these pedagogical transformation, it is the accountability of public powers to create the conducive atmosphere and incentive for action. Through the Erasmus+ programme, monetary support is being provided for the aim of supporting policy inventiveness at a national or institutional level. The support is also availed to peer learning and collaborative cross-border initiatives, for example, infrastructures, quality assurance guidelines and credit recognition. A moment ago, the African nations have started using e-Learning in HLIs as tool for promoting learning. The trend of increasing figure of HLIs in Africa it provide a room to attempts to execute e-learning strategies particularly to share instruction technology resources, to ensure equity, quality as well as to integrate globally specifically in education to HLIs and convene the trend of education of the current situation.

In recent times the arrival of internet has made possible remarkable innovation in the delivery of tertiary education via adoption of e-learning in HLIs (Gunasekaran et al, 2006). Currently, the application of ICT and multimedia resources has been increased. Thus, e-Learning has gained its popularity in both companies and higher education whereby in education sector the e-learning to students and instructors have provided flexibility in learning process. The utilization of e-Learning equipment has brought substantial changes in terms of education delivery and support processes (Dublin, 2003). The function of e-Learning in HLIs has been established by the research report conducted by Wang et al., (2007).

The aforementioned study portray that the scientific modernization as well as the use of internet in teaching process have manifested transformation from the customary mode of deliverance in teaching to modern one which integrate technology. E-Learning assists the teachers to two in one role; as instructors and also they become the coaches and tutors. Through e-Learning, teachers are capable of monitoring students' progress and the level of attention is being enlarged. Likewise, on the side of students, e-learning offers larger flexibility of access to teaching and learning materials. E-Learning also

permits learners an advantage from being Microsoft Office Specialist as major asset for their future careers.

Despite the crucial role it contributes enhancing the excellence of education provided, the implementation of e-Learning implementations has for a long time remained to be the challenges mainly in ICT-challenged environment (Awidi,2013). The e-Learning in developing nations including Tanzania has been introduced while there is inadequate quantity of information about the use of e-learning to facilitate learning. The major impediments to Africa's education sectors are persuasive for the execution of e-learning strategies (Lodhia, 2006). Thus, the application of e-Learning to the developing still in at infant stage and little is known on its application in both research and practices particularly in HLIs. The study by Noyi (2013) showed that despite of Education Sector Development Programme (ESDP) in Tanzania to come up with Information and Communication Technology (ICT) as training policy which promote science and technology (Tilya, 2007; Nkumbi, Warioba&Komba, 2006), Information and Communication technology it have not been considered as the priority in Education Sector Development Program (ESDP) activities a described by Stienen (Stienen, 2007).

1.3 Statement of the Problem

Majority of the HLIs from developing and developed nations in the world have adopted the e-learning as initiatives to promote quality of learning process in HLIs. The study by Harasim, (1989) depicts that, the application of e-Learning is a unique and promising Learning technology. whilst many e-Learning enjoyed widespread attention during the late 2000s where businesses began using e-learning to train their employees and HLIs adopted e-Learning to improve quality of teaching and learning, little is known on its application in HLI.The study by Mtebe (2014), portrays that e-Learning have become adopted well in developed nations compare to third world nations which e-learning is still in primary stage the degree of application is low most of majority to East Africa particularly in higher education. The study also discovered problems in accessing the computers and the internet, non appearance of guiding principle and lack of skills are main barriers to the use of e-Learning.

Thus, the uptake findings show that the application of e-learning in third world nations still in preliminary stage. Majority of public and private HLIs in developing nations which have implemented e-Learning have not always been positive. While e-Learning has been adopted or implemented in the developing nations, little is known about its application impacts or consequences on the HLI in Tanzania. To address the knowledge gap, the present study assessed the uses of e-learning to HLIs particularly to Tanzania contexts.

1.4. General Objective

The present study aimed at assessing the application of e-Learning in HLIs in Tanzania. Specifically the study was guided by the following specific objectives.

- i. To determine the e-Learning services which available in HLIs
- ii. To identify the relationship between learners characteristics and application of e-Learning in teaching and learning process in HLIs
- iii. To determine the relationship between the instructors/tutor characteristics and application of e-learning in HLIs.
- iv. To identify the challenges on the application of e-Learning in HLIs

1.5 Research Questions

The study was guided by the following research questions:

- i. What are e-learning services available in HLIs?
- ii. What is the link that exists between learner's characteristics and to application of e-learning in their learning process in HLIs?
- iii. How do the instructors characteristics relate to application of e-learning in teaching and learning process in HLIs?
- iv. What do you think are the obstructs in HLIs in the process of using e-learning?

1.6. Scope and Limitation of the Study

The study was confined to assess the application of e-Learning in HLIs in teaching and learning process in Tanzania. The study was limited to three HLIs namely: Mzumbe University, Sokoine University and Jordan University College located in Morogoro region. Morogoro region was selected in this study because of the convenience for the researcher to easily collect data at a minimum cost while in Morogoro region, unlike other regions which are far away from the researcher's residence, which could lead to increase in cost of conducting the research study. Besides, the presence of the intended respondents, financial constraints as well as time limit determined the area to be selected as the case study

1.7 Significance of the study

According to Louw et al, (2008), e-learning is explained as an ideal which have a power of transforming the performance, knowledge and skills landscape. This study had the following significance in improvement of application of e-Learning in HLI in Tanzania through looking on how e-Learning enhancing teaching and learning process. Despite of initiatives to accept e-learning in HLIs the study identified some of the challenges such inconsistency power supply, poor internet connectivity, few technical expert as well as computer illiterate to the users of which if the government will follow the recommendation such as restructuring the curriculum to Tanzania education from primary students are suppose to be taught computer as formal subject which is recognized by government and it should be compulsory to all as well as ensuring reliable source of power(electricity) will enhance its applicability.

Furthermore ensuring wireless internet to the whole environment of the HLIs also will provide back to the users to ensure application of e-learning to HLI Moreover the government is responsible for formulating partnership with private company which will ensure availability of cheap bandwidth to academic areas regulating cost of internet so this will ensure sustainable development in application of e- learning in HLIs. The present research findings contribute a significant change on the application of e-Learning to instructors/Tutors and learners in HLIs if the finding observed is solved

accordingly. Also, the knowledge obtained in this study helps other researchers and practitioners to learn about the current status of instructors and learners in regard to integration of e-learning in teaching and learning process to HLIs. The study also contributes to body of knowledge to the literature in the field.

1.8 Dissertation Structure /Organization

This research consists of six chapters. The first chapter covers the introduction and background information, as well the problem statement of the study. The next chapter entails the theoretical and empirical literature review. In addition, the third chapter addresses the research methodology employed. The methodology section comprises of research approach and design, study area, population size, sampling procedure and sample size, methodology of data collection, validity & reliability of research instruments, research ethics as well as data analysis methods. Chapter four presents the findings of study and the fifth chapter comprise the discussion of findings. The last chapter presents the summary of the study, its conclusion, research findings implications in the aspect of theory and policy. The lists of bibliography and appendices are also attached in at the end of this dissertation.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter provides an overview of the relevant literature regarding the application of e-Learning in teaching and learning process by HLIs in Tanzania. The literature review covered subtheme such as theoretical framework, definition of e-Learning, Applicability of e-Learning, and Curriculum implementation. Synthesis of the literature, Justification of the current research study, Conceptual framework of the current study as well as the empirical review of previous studies the application of e-learning in HLIs in leaning context in developed and developing nations particularly in Tanzania.

2.1. Definition of the Key Terms

The section presents, the definition of various key terms as applied in the current study such as e-Learning and its types, Online learning as well as (ICTs).

2.1.1 E-learning

In provision of description of e-Learning there is no clear universal definition. However, according to Rosenberg (2001) e-learning can be described as the use of ICT infrastructure to provide great range of solutions pertaining to traditional way of teaching so as to enhance knowledge and performance. E-learning could be introduced asynchronously and synchronously in education. E-learning can be described as a conducive learning environment by the application of ICTs and its integration through the curriculum to leap a modern learning approach for reflecting the main objective of students (Ma et al, 2008). Further, the main essence is to restructure the traditional teaching and learning approach aiming to train a volume of students with high quality.

Various researchers point out that utilizing e-Learning is like an asynchronous. Using online facilities outside and inside the classroom contribute in improving the quality of education by integrating web services and using internet applications, tools, learning

management systems such as blackboards and online forums. Additionally, the use of e-systems helps in improving the learning environment by enhancing the efficient and effectiveness of teaching for their learners (Alhojailan et al. 2011; Solomon and Schrum 2007; Bennett et al. 2012).

2.1.2 E-Learning Technologies

According to Ndonje(2013) argued that various e-learning technologies which have been used is determined with the contexts to be applied. These technologies include Television (TV), CD ROMs, Learning Management Systems (LMS), CMS, and virtual worlds as well as collaborative technologies, but the most used e-Learning tools are Blackboard vista and Moodle (Mazman & Usluel, 2009).

2.1.3 E-Learning Delivery Approaches

E-learning approaches can be determined by two categories which is Asynchronous or Synchronous conceivably a variety of approaches can enhance the learning available in web. However generating web pages it provide flexibility in learning through the courses available as well as full-fledged course management also can be used as an approach through Learning Content Management System (LCMS). E-learning materials can be accessed through various modalities.

2.1.4 Different Types of E- Learning

The study by Hrastinski (2008) pointed out that there are mainly two types of e- learning

a) Synchronous

This is the type of e-learning which entail interactions of students with the instructor through the use of Web in real time. Their interaction is achieved through the use of instant messaging, chat, audio and video conferencing. Conversely, synchronous has some advantageous such as ability to log or track learning activities, continuous keep an eye on and correction if possible, capability to personalize the teaching for each learner as well as promises of global connectivity and collaboration opportunities among learners.

b) Asynchronous (self study learning)

This is defined as the content that is available online at any time that for the learners to access(Singh, 2003). It is the type of information that are available and accessible for self-help type. According to Hrastinski 92008), this type of e-learning provides some useful role to the students as it provide potential information at the time when it is need and also has interaction among the learners via message boards, bulletin boards and discussion forums.

2.1.5 Online Learning

Online learning is mainly used when research adapts web services (Kear et al. 2012) to design learning activities through the use of website tools. Online learning in higher education continues to develop and flourish as a medium for instructional delivery of education activities.

2.1.6 Blended Learning

This is the type of learning which involves combining different approaches of learning such as classroom and e-Learning to create a single learning programme (Smith, 2001). It is also called hybrid type of learning. Through this approach, the needs of many learners and instructors have been greatly achieved through the use of ICT. Moreover, blended learning combines several event-based activities such as face to face classrooms, self-paced learning (asynchronous), and synchronous. However the application of e-Learning in teaching and learning process by HLIs is not positive so there is a need to enact policy and structuring curriculum so the mechanism of delivering through e-Learning become more positive in HLIs in Tanzania.

2.1.7 E-Learning in HLIs

The use of e-Learning in HLIs has facilitated the universities to provide learners/students much more flexible access to learning resources. But when considering the application of e-Learning system, it provides flexibility to learners to opt various means of learning process. The study by Ndoje, (2013) portrays that learners in various universities admit that currently they can access teaching materials online which in one

way or another has simplified the learning processes. Nowadays they are able to personalize web environments in which they can establish forums with their class or group to allow flexibility in their studies.

2.2 Information and Communication Technology (ICT)

According to URT(2007), ICT is explained as the type of technology which is mainly used for communication purposes and it is also used to transmit, store, create, share or exchange information. Thus development and utilization of ICT in HLIs from the developing nations is of great importance if these nations aim at minimizing the knowledge and economic gap with the remaining countries in the world (Farrell and Shafika, 2007). The operational definition of this study, ICT will comprise of technologies such as computers, Internet, Televisions, Photocopiers, servers, Radio, Whiteboard, Telephone, satellite, projectors and audiovisual equipments which is used to enhance utilization of e-learning in the learning contexts.

2.3 Theories related to applicability of e-Learning/Theoretical Backgrounds

Theories are the useful approaches of explaining how various things work and how the principles are related as well as what are the causes of various things to work together (Austin et al, 2001). There are many theories that can be used when conducting studies on e-learning. Many literatures reveal that the application of e-Learning is determined by institutional factors which are either internal or external which are dimensions crucial for e-Learning application. Previous study carried on e-Learning applied various theories to examine the determinants of e-Learning application in HLIs. This research is mainly guided by two theories which are Diffusion of Innovation Theory and Technology Acceptance Model (TAM)

2.3.1 Diffusion of Innovation Theory

This theory has been applied in various ranges of body of knowledge including education, sociology, communication, agriculture, marketing, and information technology (Rogers, 1995; Karahanna, et al, 1999; Agarwal, Sambamurthy, & Stair, 2000). The theory depicts that an innovation is an idea, practice, or object that is

perceived as new by an individual or another unit of adoption. Diffusion, on the other hand, is defined as the process by which an innovation is communicated through certain channels over time among the members of a social system (Rogers, 1995). Thus, potential users make decisions to adopt or reject an innovation individual or another unit of adoption. Robinson (2009) also added that, Diffusion is a process that communicates an innovation through specific channels among the members of a social system. According to Rogers' Theory of Diffusion of Innovation , adopters of innovation are as depicted in figure 2.1 hereunder.

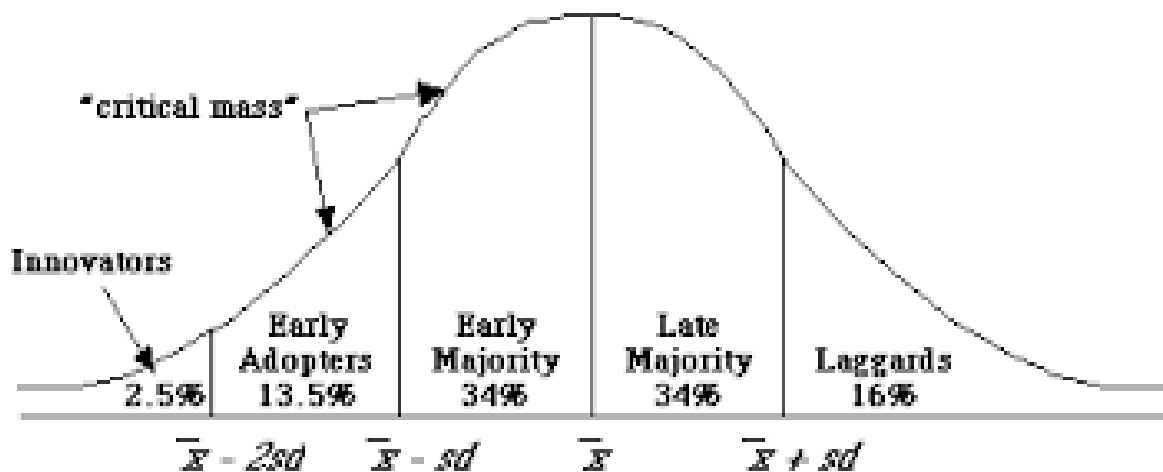


Figure 2.1: Adopter Categorization (Rogers, 2003, p. 281)

The Figure 2.1 establishes that population can be categorized into five parts based on their tendency to adopt a particular innovation. The categories consist of innovators, early adopters, Early Majorities, Late Majorities and Laggards.

The adoption as decision process requires the potential adopter collect information regarding the technology, examine the technology, and consider whether it provides sufficient improvement to deserve the investment of energy and time that is needed to add it to his/her range of skills (Rogers, 2003). As the result, people tend to explore the new technology, and experience how effectively it would work in their activities before accepting or rejecting those technologies (Rogers, 2003).

The theory reveals that social change is the major criteria that explain a successful spread of an innovation and (Robinson, 2009).

2.3.2 Application of Diffusion Innovation Theory

The theory provides opportunity for the administrator to create conducive environment to the learner and instructors. It helps in the strategic planning for e-Learning implementation including the design and planning of educational technology courses, Information and Communication Technology resource and infrastructure planning. The theory is also used in the design of improved methods of professional evaluation and assessment

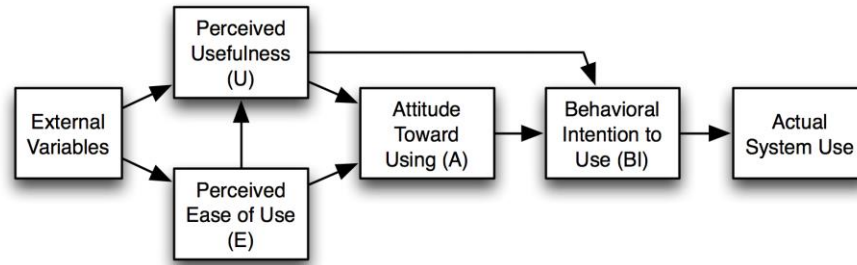
2.4. Technology Acceptance Model (TAM)

This type of model is consistent with Rogers (1983) theory of diffusion of innovation in which technology adoption rely on numerous factors such as relative advantage and simplicity to use. Davis (1989) proposed a technology acceptance model (TAM) which is based on Theory of Reasoned Action (TRA). In TAM, the behavior behavioral intention of people is to accept and use a certain technology which is determined by two constructs namely; perceived usefulness and perceived ease of use. User's attitude and belief is perceived to be a significant feature which manipulate the use of new technology. People having positive perception on the use of technology are said to have higher acceptance of the use of e-Learning than those having negative perception in using that technology.

The study by Davis et al. (1989), pointed out that through TAM, people may accept or reject a particular technology if and only if they believe it is useful executing their job effectively. TAM proposes that when users are subjected with a new technology, several factors influence their decision about how and when they will use it, notably:

- i. **Perceived usefulness (PU)** – this is the degree or extent in which a person believes that using a particular system would enhance his or her job performance".

- ii. **Perceived ease-of-use (PEOU)** – this is the degree to which a person believes that



using a particular system would be free from effort" (Davis 1989).

Figure 2.2: The Technology Acceptance Model (Davis et al 1989)

2.4.1 Application of Technology Acceptance Model (TAM)

Technology Acceptance Model is among of model which have been tested scientifically and it become justified with its validation, application and replications (Lee, 2010; Venkatesh, 2000). Thus, TAM is among the strong and most powerful, robust and economical model for predicting user acceptance.

2.5 Empirical Literature Review

This section attempts to review studies and academic writings from previous researchers who conducted their studies in the similar problem pertaining the application of e-learning in HLIs particular the utilization of ICT infrastructure. The review is conceptualized according to the objectives of study.

2.5.1 Contribution of e-Learning in enhancing teaching and learning in HLIs

For more than a decade, rapid development of ICT for the purpose of improving teaching at HLIs has been observed. HLIs in various nations in the world have rapidly changed and adopted the use of e-learning to improve the learning activities (Glenn 2008; Al-Senaidiet *al.*, 2009; Meenakshi 2013). Among the driving forces on this

adoption include but not limited to: accessibility to quality educational materials (Ally2008); learning potentials via simulations, multi-media presentations as well as electronic communication and collaboration (Sifeet *al.*, 2007; Guri-Rosenblit 2009), and learning flexibility such that learners can have control over the content, learning sequence, and pace of learning to mention the few (Hill 2003; Bhuasiriet *al.*, 2012). So the literature above put emphasis on the application of e-Learning in HLI despite of challenges which the developing nations are facing.

The study by Boezerooij (2006) point out that most of higher education institutions has adopted e-learning strategies in education delivery as way to promote learning. adopting e-Learning in enhancing teaching and learning in higher learning process is a vital tool to provide education access to the people who are found in the remote and rural areas. E-Learning has been well implemented by majority of HLI from the developed country. Contrary, its implementation is at infant/primary stage in the developing nations. The application of e-Learning in HLI has helped in enriching the distance learning and to reach the goals of education.

The study by Evelyn Kahiigi (2013) on Collaborative E-learning Approach in Higher Education in Uganda point out that the integration of e-Learning into the education system is revealed as among the reasons to meet the growing need for high quality education. On the other hand, e-learning is often limited and in some cases lacking in HLIs. Currently in many developing nations, education is one of the most under-resourced sectors in society. The study further focused on how collaborative e-learning can be integrated in the teaching and learning process to support learning at the university level. The study concluded that African universities should take a lead in using e-Learning to enhance learning and teaching activities

Additionally, the research report by Bretag (2011) established that education technology has led to a reconstruction and not re-modeling. Now day's teachers are instructing by using of power-point slides rather than using the convectional approaches such as the use of chalkboards. Recently, E-learning is being used as a way to build onto existing methods. This can be substantiated when learners use laptops but limit their use of

functionality on the laptop. Thus, E-learning facilitates the learning processes in order to create, manage and use technology to improve teaching and learning (AECT, 2004). Substantiating the importance of e-learning in teaching and learning, by Gaebel (2013) portrayed that the potential of e-Learning in higher education, and its broad range of possible implications for institutions and learners, governments might be expected to take a keen interest in it. Moreover Pirani, (2004) observed that the speedy growth of e-Learning by HLIs leads to big change for students and tutors. Learners can demonstrate their learning efforts via different types of technology such as text, video or audio devices.

The potential of e-Learning was also paid attention by the European Commission “Opening up Education” Communication and through funding support from the EU Horizon 2020 programme and the Structural Funds. Indeed, e-learning could become an area of intergovernmental exchanges and knowledge-sharing, with special concern for the experience of those nations that launched e-learning initiatives about a decade ago. Another aspect worthy of attention is the opportunity for greater policy convergence among European nations on matters such as the technical and legal aspects of e-learning, given that for most of them these are fairly novel issues in policy making (European Mapping Survey, 2013).

The study by Rhema and Miliszewska (2014) describes that student attitudes and beliefs towards e-learning, as well as their satisfaction with technology and past e-learning experiences are regarded as success determinants of future e-learning initiatives. The role of e-learning in the developing nations is currently being revealed (UNESCO, 2006). The application of e-learning in developing nations has gained its pace with an improved availability of Internet connections, local area networks, and IT support (Omidinia et al 2011; Tedre et al 2010; Williams et al 2011). Despite of such initiatives taken in developing nations still challenges prevail. The active, participative student who is required for interactive learning is rare, and the traditional methods are widely used in teaching and learning (Andersson&Grönlund, 2009; Eastmond, 2000; Evans, 2005; Sehr, 2003).

Also the study of Ibrahim (2013) which was conducted to Saudi Arabia universities showed there was a serious desire to integrate e-Learning tools and services by providing commercial Learning Management Systems, such as WebCT (e.g. Blackboard) and to encourage the use of e-Learning (Alebaikan, 2010). Majority of universities have started getting some of their objectives recognized and integrated into eLearning strategies. Others have already opened e-Learning gates. These are products that service e-Learning systems and provide the tools to help students and staff to improve learning. These gates have the potential to be used with e-Learning courses in universities; however the adoption and application of e-Learning in HLI were facing with the number of challenges. Nonetheless various reports concur themselves that ICTs plays crucial role in facilitating the educational processes (Vaughan & Garrison, 2006). Thus, the developing nations should adopt e-Learning in teaching and learning so as even the people in remote areas can get access to education.

Similarly, according to study by Light (2009) on the role of ICT in enhancing education in developing nations the results from an evaluation of the Intel reach essentials course in India, Turkey, and Chile depict that through ICT student can learn by exploring contents, conducting research, and applying knowledge to real problems. Light comes with giving example in History subject, He describes that students acquired a lot of content through research to learn more deeply and they were more motivated by the new ways of learning. Nevertheless proof has over and over again discovered that ICT-mediated instruction using conventional teaching methods is as good as traditional face-to-face instruction and, in the case of computer-based instruction, may in select instances improve student learning and attitudes towards learning. However worldwide, research into the effectiveness of ICT-mediated instruction is continuing and should provide a clearer picture of the effectiveness of ICT in supporting teaching and learning process. as revealed in Light findings on history subject observation where students is able to search various information concerning his/her study through ICT facilities so the installation of good infrastructure facilities in ICT which facilitate e-Learning in

HLIs still vital issues for promoting self learning as well as online learning for developing nations should consider that.

While the e-Learning is plenty being applied by HLI by the developed nations, challenges are however plentiful in many developing nations. Among the problem is due to lack of vital e-learning components such as internet, computers, electricity and skills (Dhanarajan, 2001; Heeks, 2002; Rajesh, 2003). Nevertheless the process of promoting e-learning to third world nations it should be determined by particular country through understanding all obstructs which act as barriers to adopt effective e-learning. Because e-learning most often is being transferred from the developed world we need to know not only what challenges that are already found and to some extent met in the developed nations, there is also a need to understand in details additional challenges to developing nations specifically in the process of adoption e-Learning. Among the key constraints of application of e-Learning to most of African nations according to the e-Learning Africa Report (2012) are as presented in Table 2.1 hereunder.

Table 2.1: The E-Learning Africa Report(2012)

Rank	Constraining factor	%	The country most likely to identify this as a constraint	The country least likely to identify this as a constraints
1	Bandwidth is limited	17	Zambia	Kenya
2	Financial resource are lacking	11	Zambia	Nigeria
3	HR capacity is inadequate	11	South Africa	Tanzania
4	Electricity limited	11	Nigeria	South Africa
5	Appropriate training is lacking	8	Kenya	Uganda
6	Appropriate hardware is lacking	7	Tanzania	Ghana
7	Lack of trained teachers	6	South Africa	Nigeria
8	Appropriate software is lacking	6	Tanzania	Ghana
9	Political will is lacking	4	Nigeria	Uganda
10	Corruption and thefts of resources	4	Uganda	Zambia
11	Lack of good quality educational content	4	Tanzania	Nigeria
12	Pressure of Poverty	3	Kenya	Uganda
13	Sustainability is not prioritized	3	Kenya	Tanzania
14	Leadership is lacking	3	Nigeria	Uganda
15	Instability and lack of security	1	South Africa	Zambia
15	Other factors	1	N/A	N/A

Source: e-Learning Africa Report(2012)

2.6 Application of e-Learning in HLIs in Tanzania

Like in other higher education from the developing nations, the application of e-Learning platform in Tanzanian universities is at infancy stage. The reasons behind this could be resistance to change, and lack of knowledge, skills and awareness of the importance of e-Learning in teaching and learning practices. Other factors could be lack of speedy and reliable internet connectivity, lack of e-Learning policy, and lack of ICT facilities such as computers. Perhaps substantial effort have been made by the government through the enactment of National Information and Communication Technology in 2003 and the Tanzania Communications Regulatory Authority Act (URT 2003), the rate of E- learning adoption has been reported to be low. The two enactments lead to provision of license to telephone service provider where eleven public data communication companies, nine private (dedicated) data services companies, and 24 public Internet service providers (ISPs) were issued (TCRA 2007).

The study by Mutula and Ahmadi (2002) reveals that the government has provided taxes exemptions to all accessories related to computers and allied equipment, and reduced license fees and royalty payable by the telecommunication Operators. Apart from the initiatives done by Tanzania, the study by Issa (2008) shows that the available ICT infrastructures are not primarily for classroom teaching in Tanzania. Thus, the application of e-Learning itself in developing nations including Tanzania is not well realized in both teaching and learning process.

2.7. Conceptual Framework

From Figure 2.3, the factors influencing application of e-learning in HLI in the context of learners and instructors. The framework shows that e-learning application factors are categorized into internal and external one in Tanzania's HLIs.

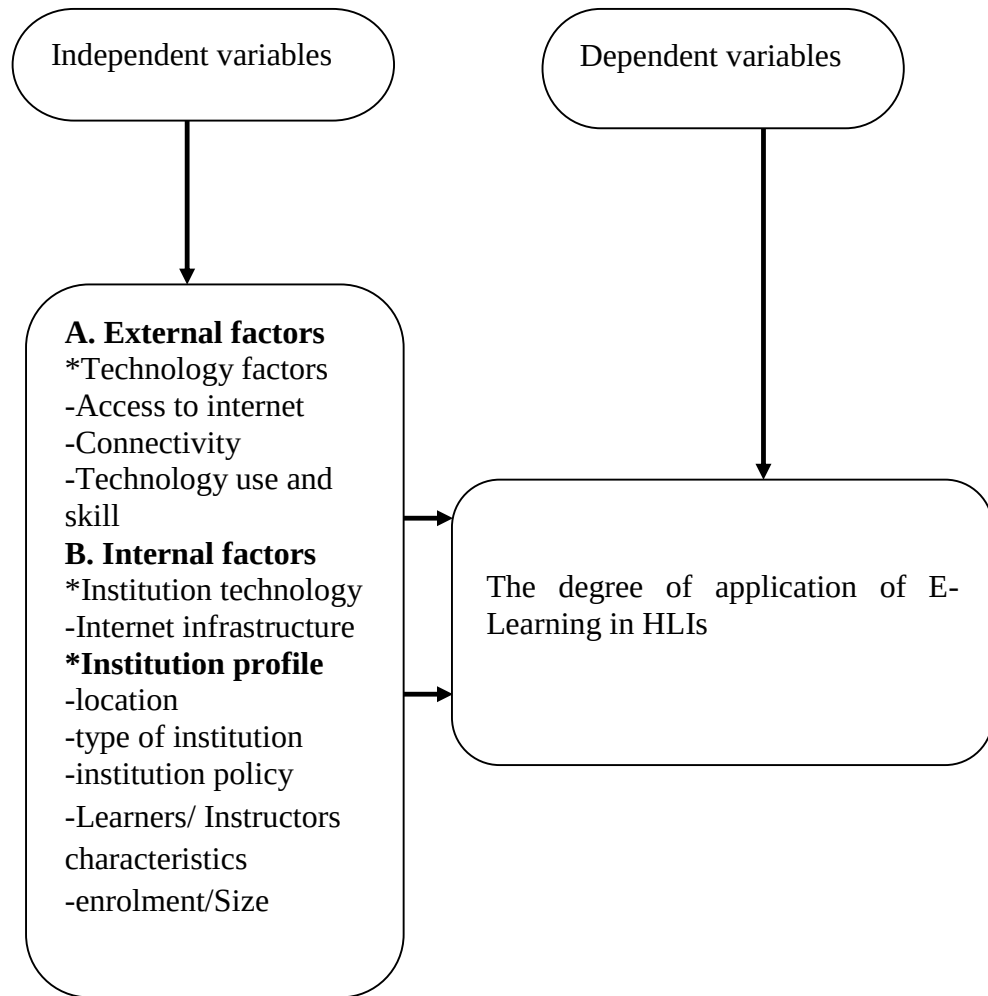


Figure 2.3: E-learning Application in HLIs Conceptual Framework

Source: Researcher constructs (2016)

2.7.1 Description of the variables from the conceptual framework

The application of e-Learning is determined by internal and external factors within the institutions itself as well as learner's characteristics and instructors characteristics in teaching and learning process in HLIs.

2.7.2 External E-learning determinant factors

a. ICT Infrastructure

Among the challenges facing majority of the HLIs in various nations is the absence of stable ICT infrastructure such as unstable internet, extranet and LAN (Fares, (2007). The study further establishes that contexts must be capable of providing flexibility to students on the application of e-Learning. The learning atmosphere should avail students and teachers with high degree of reliability and accessibility. Absence of basic components, such as hardware, software, bandwidth capacity as well as inconsistent power supply is also facing many HLIs.

b. Technology Use and Skills

The use of the web, computer, and mobile-based technologies has pinched a lot of curiosity among students. This implies a degree of familiarity with these technologies and the skills for using those (Trucano et al., 2012). Many research studies reveal correlations between positive computer experience and positive attitudes, competence and comfort with computers (Schumacher & Morahan-Martin, 2001; Pa-paioannou & Charalambous, 2011; Paris, 2004) and an inverse relationship between computer experience and computer anxiety (Busch, 1995; Olatoye, 2011).

2.7.3 Internal e-learning determinant factors

(i) Institutional policy

Literature shows that the application of e-Learning in developing nations is also affected by lack of institutional policy and strategies. The study by Lwoga, (2012) pointed out that utilization of teaching technology is influenced by individual efforts than rather that institutional policies and strategies in HLIS. Thus from the basis of the motivations and values of individuals, institutions missions and visions as well as well national policies are needed to encourage application of e-Learning for educational purposes.

(ii) Institutional management support

The study by Venkatesh et al., (2003) establishes that management support is the extent to which organizational and technical resources exist to support the use of the system" additionally, Venkatesh and Bala (2008) stated that, when users hold a strong believe with regard to the availability of organization resources, technical and managerial support, then, that will facilitate the adoption of technology in question.

(iii)Learners and instructors characteristics

Demographic factors which include age, gender, sex and level of education is among of learners and instructors demographic characteristics which determine the application of e-learning in HLIs. According to Berteau, (2009) and Cheng, (2006) describes that gender is an important aspect in understanding the differences in insight of the helpfulness of technology and feelings and perceptions of e-learning. Other studies pointed out those male students had more positive feelings towards e-learning than female students (Liaw& Huang, 2011; Papaioannou & Charalambous, 2011; Whitley, 1996).

(iv)Institutional location and Technology

Sufficient shore up individuals to become relaxed with systems and software which then leads to learners 'satisfaction with e-Learning and to end with adopt the technology. Institutional support is need for successful implementation of e-Learning in HLIs (Selim, 2007).

(v) Enrolment Size

The acceptance of e-learning is determined with the population of the users at the particular HLIs.

2.8 Rationale of Study

Diverse previous studies have been done on e-learning and its adoption. For example, Kahiigi (2013) conducted the study on Collaborative E-learning Approach in Higher Education in Uganda. This study portrays that there is inadequate knowledge about e-learning in developing nations. Moreover, the study by Rhema and Miliszewska (2014) depicts that student attitude and beliefs towards e-learning, their satisfaction with

technology and past e-learning experiences are the major determinants of successful future e-learning initiatives. Additionally, study by Ndonje (2013) on the factors for e-learning adoption in Tanzania describes that institutional policy, complexity, openness to change, instructor timely response and Training on the use of e-Learning have significant impact on e-learning adoption in HLIs.

While majority of the reviewed literature dwell much on the adoption of e-learning and its potential benefits for developing nations, none of these studies have captured the utilization of e-learning by HLIs in teaching and learning processes. Increasingly, research on user perspectives of e-learning in those nations is limited.

Although it is acknowledged that the government has tried to put some initiatives, among them being enactment of Information and Communication Technology Policy of 2003 in education curriculum, yet the literature on the degree of application of e-learning in HLIs in the developing nations including Tanzania is scant. Thus, little is known in both research and practices on the application of e-Learning in higher learning in the process of teaching and learning. The present study will cover this knowledge by assessing the application of e-learning in HLIs.

2.9 Conclusion Remarks to the Chapter

To sum up this chapter provided the observation on the literature review where various studies conducted on e-learning to the developed and developing nations. Most of the reviewed literatures show the presence of initiatives of adoption of e-learning in HLIs. This chapter also identified the impediments for successful e-learning in higher learning such as power cut off and few experts to support users. Moreover reviewed literature identified e-learning services which available to HLIs as well as the challenges facing e-learning in HLIs which is in lines with what has been revealed in the research findings of this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes various methods and techniques used by researcher in collecting and analyzing the collected data. The sections comprises of research design, research approach, area of the study, population of the study, sample and sampling procedures, research ethics, data collection methods, validity and reliability of the instruments and data analysis which used in this study.

3.1 Research Design

This is the roadmap which determines the best way to reach the destination. Kothari (2004) explained that research design refers to the arrangement of conditions for the collection and analysis of data in a manner that aims to combine relevance with research purpose. Moreover, research design is referred to as a framework used as a guide to collect and analyze data (Lacobucci& Churchill, 2009). In this study, cross sectional survey type of research design was employed so as to get accurate information. This type of research design helps the researcher to get enough information on topic under study once. The approach is flexible and serves time as well as costs.

3.2 Study Area

The study was conducted at Mzumbe University, Sokoine University and Jordan University College, in Morogoro region. Mzumbe university and Sokoine university are public HLIs while was a private HLI. These study areas were selected because they are among the institutions which have shown remarkable application of e-learning in their teaching and learning processes. Thus, it was easy to access data on the application of e-Learning in HLIs.

3.3 Study Population

According to Christensen and Johnson (2010) population is defined as a large group of people to whom the results of the study are to be generalized. Therefore, the target population for this study was the instructors, Learners, ICT head of Departments, Academic Dean and Principals in the respective. The selection of instructors, ICT head of the Departments, Academic Dean and Principals was based on the fact that the mentioned target populations are the key main stakeholders who are directly involved in the teaching and learning. Their directly involvement in teaching and learning process assist them to provide potential information on applicability of e-Learning in HLIs

3.4 Units of Analysis

The unit of analysis of this study is the individuals (tutors/instructors, learners and experts of ICT) at Mzumbe University, Sokoine University and Jordan University College.

3.5 Sample size and Sampling Techniques

This study used a sample size of ninety (90) respondents. Out of ninety (90) respondents, sixty (60) respondents were learners while thirty (30) respondents were instructors. The sample is said to be representative as Kothari (2004) pointed that a sample size of more than 30 respondents is representative and guarantee for the study to be conducted. Both probability and non probability sampling techniques were used in this study. The simple random probability sampling was used to select respondents from Instructors/tutors and learners, while purposive non probability sampling was used to select respondents from key informants such as head of department of ICT. The distribution of sample size is as depicted in Table 3.1 hereunder

.

Table 3.1: Sample size distribution of respondents

Type of respondent	Sample size	Technique for selecting the sample
Instructors and ICT experts	30	Purposive sampling and simple randomly sampling
Learners	60	Simple random sampling
Total	90	

Source: Field Data (2015)

3.6 Types and Source of Data

According to Dawson (2007) described that primary data are information collected by researcher specifically to obtain valid data for his/her research study. Moreover this study used primary data during the study, Furthermore these data were obtained via the use of questionnaires, observation and being supplemented with interview guide.

3.7 Instrument for data collections

3.7.1 Questionnaires method

Questionnaire normally contain a set of series question which designed gather information to the particular study/phenomena (Christensen et al, 2014). In this study closed questionnaires were prepared in English languages to gather information. Questionnaires provide a relatively cheap, quick and efficient way of obtaining large amounts of information from a large sample of people. It is also a recommended tool of data collection when cross section survey design is used in the study.

3.7.2 Interview Method

Interview it comprises live conversation between the researcher and respondent where researcher ask question to respondent concerning the study intended (Cohen and Morrison 2000). Structured interview was used to gather information from key informants in this study. This method was used to solicit information, views and opinion from the respondents when it was difficulties in completing the questionnaire and for those who was uncomfortable to fill in the questionnaires. Interview methods also involved obtaining information through face to face conversation between researcher and the above targeted respondents.

3.7.3 Observation

Christensen and Johnson (2010) Observation in research it described as the direct observation through using all senses to determine all issues which is happening to the particular area where the study is conducted. The researcher observed some of ICT facilities like computer lab to all three HLIs which justify the application of e-learning to the learner's, also there well equipped offices with ICT to instructors offices as well as presence of wireless internet to some areas also show that there is adoption of e-learning in HLIs.

3.8 Ethical Issues

According to Dawson (2007) as a researcher you must remember that the research process intrudes on people's lives. Some people who take part in your research may be vulnerable because of their age, social status or position of powerlessness. In adhering to ethical issues, the researcher after successful presented the proposal, the clearance letter allowing going for data collection was issued by the Directorate of publication and postgraduate studies of Mzumbe University. During data collection, respondents were introduced the purpose of the study and they were informed that the information they provided was kept confidential and used for academic purpose and not otherwise.

3.9 Data Analysis

Kothari (2004) defined data analysis as the computation of certain measures along with searching for patterns of relationship that exist among data groups. Data from respondents were coded, tabulated and analysed descriptively and presented through the use frequencies, mean, tables and percentages.

3.10 Validity and Reliability

Validity refers to the extent of which a test measures what we actually wish to measure while on the other hand, reliability refers to a measurement that supplies consistent results (Blumberg et al., 2005) and Kavale (1996). The validity of this study was ensured through the use of a multiple data collection techniques known as triangulation were

applied in this study. Furthermore the technique was involved the use of more than one method of data collection such as questionnaire, interview and observation. Consequently permits the researcher to combine strength and correct some of the deficiencies of some source of data. This technique helped to overcome the problem of relying on only one method while at the same time was increased the validity of the data obtained on the topic of "Application of e-Learning in HLIs". On the aspect Reliability, the standard questionnaire used by previous studies was adapted and some modified to fit the purpose of this study and allow generalization of the study on the application of e-Learning in teaching and learning process in HLIs.

3.11 Conclusion Remarks to the Chapter

This chapter provided the various methods and techniques used by to collect data. Observation, questionnaire and interview were used to obtain information and tools used to analyze the data. The sample size where there were 90 respondents comprising of lecturers, learners and ICT expert was selected in three HLIs(Mzumbe, Sokoine and Jordan university college at Morogoro region). This chapter also include the research design, research approach,, research ethics, data collection methods, validity and reliability of the instruments and data analysis which were used in this study.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.0 Introduction

This chapter presents the research findings on the application of e-Learning in HLIs. The research findings are presented based on the specific objectives of the study. The chapter starts by providing the findings on the demographic characteristics of the respondents, e-Learning services which available in HLIs, the extent to which e-Learning is applied in teaching and learning process in HLIs as well as to Tutors/Instructors, challenges faced by Students, Tutors when applying e-Learning in teaching and learning process.

4.1 Demographic data of respondents

Learners and instructors demographic characteristics of respondents have been presented separately by considering the specific objectives of the study.

4.1.1 Demographic characteristics of learners

This part of learner's demographic data involved four parts; the gender of the respondents, The findings regarding the age, level of education, as well as the area of specialization of the respondents (Students) are as presented in Table 4.1 hereunder.

Table 4.1 Characteristics of respondents Learners

Variables	n(%)
Gender of learners	
Male	33(55)
Female	27(45)
Total	60(100)
Age of Respondents	
15-25	42(70)
26-35	25(25)
36-45	3(5)
46 and above	0(0)
Total	60(100)
Years of study	
First year	10(17)
Second year	21(35)
Third year	24(40)
Master	5(8)
Total	60(100)
Area of specialization	
Law	3(5)
Administration &Mgt	8(13)
Business and Accounts	2(3)
Education	8(13)
Agriculture	3(5)
Other	36(60)
Total	60(100)

Source: Field Data (2016)

4.1.2 Gender of the Respondents

Gender of the learners who were involved in the provision of this data for this research was vital so as to judge if response provide by are valid so that the suggestions of the researcher on application of e-Learning in HLIs could be free from bias.

Table 4.1 above shows that 55.0% of respondents were male while 45.0% of respondents were female .This finding indicates that the numbers of male students enrolled in the HLI are greater than female. The findings also entail that application of e-Learning in HLIs discussed in this chapter might have greater meaning to male since they were the majority compared to female. Indeed, the gender gap of 5% indicates that male occupied more opportunities to join HLIs than female. Therefore women should be empowered in joining HLIs in order to create gender balance.

4.1.3 Age of the Respondents (Learners)

Data concerned the age of participants (Learners) were presented into four categories; which includes those who had 15-25 years, 26-35 years, 36-45 years and more than 46 years. Table 4.1 above shows that, 70.0% of the learners had the age between 15-25years, while 25% of the learners were between 26-35 years old. The research findings also show that 5% of the learners had between 36-45 years old and none of the learners had more than 46 years old. This implies majority of the learners are of the age of schooling and those who are more used with information technology. Thus, the information solicited to the learners of the pointed age will be valid and useful in this study.

4.1.4 Year of Study of the Learners

Data concerning the year of study of learners were presented into in five categories; which includes those who are first year, Second year, Third year, Fourth year and Masters Students. Table 4.1 above shows that, 16.7% of respondents are first year at particular university, 35.0% of respondents are second year, and 40.0% of respondents are third year and Masters 8.3%. None of the learners were found to be PHD holder. Therefore, the findings show that, majority of respondents had a bachelor Degree. Being with more 40% of respondents who are third year provide remark to reliable and valid information on this study since they might have been faced with or experienced in application of e-Learning in HLIs in Tanzania.

4.1.5 Area of Specialization

Data concerned the area of specialization of respondents were presented into in six categories, which contains Law, Education, Agriculture, Business and Accounts Administration and Management and Other field . The research results regarding to area of specialization of the learners are as presented in Table 4.1.above.

Table 4.1 above shows that, 5% of learners are from law discipline, 13.3% of learners are from administration and management, 3.3% of learners are from business and accounts, 13.3% of learners are from education discipline, 5.0% of learners from agriculture discipline and 60.0% of learners from other discipline of study.. Therefore, the findings show that, majority of respondents are from almost all disciplines of study in HLIs. Being covered with many discipline of study the researcher expected them to provide reliable and valid information on this study since they might have been faced with or experienced in application of e-Learning in HLIs (HLIs).Learners and application of e-Learning in teaching and learning.

4.2 E-Learning services which available in the three selected cases of the study

This aimed at identifying the e-learning services which were available in the three selected HLIs in Morogoro. The research findings regarding the available e-learning services are as presented in Table 4.2 below.

Table.4.2 E-Learning services available in three selected HLIs in Morogoro

E-learning services available at HLIs	Mean response	%
Online Teaching	3.7	92.5
Online tests	3.5	85
Online library	3.9	97.5
Students registrations	4	100
Examination results	3.9	97.5
Online time table	3.8	95
Payment status	4	100
Grand mean (%)	3.8	95

Response key: 4:Strongly agree 3: Agree 2: Disagree 1:Strongly disagree

Source: Field Data (2016)

The findings from Table 4.2 depict majority of the respondents (Grand mean response =3.8) agreed that there is an existence of e-learning services in higher learning institutions which support the users in the teaching and learning. Thus, more than 95% show most of the respondents they know well about e-learning services which available in their learning contexts. The research findings further stipulate that the available e-learning services include online teaching, online tests/exams, online library, online student's registrations, as well as online payment system.

4.3 Learners characteristics and application of E-Learning in HLIs in the aspect of learners

This section aimed at identifying the learner's characteristics and application of e-Learning in teaching and learning process by HLIs. In accomplishing this specific objective, the researcher met respondents at their particular university. The researcher managed to extract information from a total of 60 respondents. Moreover, the aspects of characteristics based on sex and age were marked to provide valid information on application of e-Learning in HLIs. The results are as stipulated in Table 4.2 below

Table 4.3: Learners application of e-learning in HLIs

Application of e-Learning in HLIs	Responses				Total	M(SD)
	4	3	2	1		
I feel confident using the computer	33	25	1	1	60	3.5(0.62)
I enjoy using e-Learning for my studies	19	31	6	4	60	3.0(0.82)
I believe that e-Learning gives me the opportunity to acquire new knowledge	19	33	6	2	60	3.2(0.78)
I normally do some academic tasks via e-Learning at my university	17	36	5	2	60	3.1(0.70)
I believe that e-Learning enhances my learning experience	19	33	6	2	60	3.1(0.73)
E-Learning increase the quality of learning because it integrates all forms of media	18	30	9	3	60	3.0(0.81)
My university offer most of courses through e-Learning	14	27	16	3	60	2.9(0.83)
I use the web to access university based services eg enrolment, payment fees, course registration etc.	24	29	4	3	60	3.2(0.78)
I use social networking software eg Facebook, Twitter ,etc on web to communicate/collaborate with other students	21	29	8	2	60	3.1(0.77)
I download or access online audio/video recording of lectures	13	30	13	4	60	2.9(0.83)
Grand Total Mean	3.243					
Responses key	4:Strongly agree 3: Agree 2: Disagree 1:Strongly disagree					

Source: Field Data (2016)

The research findings presented in Table 4.3 point out that the mean score of 3(3/5= 60%) was the decision point to evaluate the application of application of e-learning HLIs. The mean score responses above 3 shows that e-learning is being applied to large extent while the mean below 3 describe that e-learning is not applied at all. The research findings show large extent of application of e-learning in HLIs (Grand mean score from

respondents = 3.243). The mean response of 3.243 indicates that majority of respondent (81%) agreed or strongly agreed that there is application of e-learning in HLIs.

Furthermore, respondents pointed out that there is large extent application of e-Learning in HLIs through showing great awareness on the uses of computer as well as understanding the concept of e-learning itself (Mean score from respondents = 3.50), followed by enjoying using e-Learning for their studies (Mean response = 3.08). The research results further show that the application of e-learning is practiced in HLIs where the respondents agreed that e-learning increases the quality of learning because it integrates all forms of media.

On the other hand, the interview guide response revealed that, 90% of the interviewee are aware on the application of e-Learning in HLIs, that is why when they were asked to outline in which facility facilitate them to cope with e-learning their replied that they are using university computer lab, Personal computer (laptop), Phone, and Ipad. Therefore, the study shows that majority of learners in HLIs applied e-learning tutors.

Furthermore, from the observation method, the researcher observed some ICT facilities which support e-Learning as well as search engine to surf materials for their study in all three cases of as shown in the figure 4.1. 4.2 and 4.3 below.



Figure 4.1: Computer lab at Mzumbe University showing ICT facilities

Source: Field Data (2016)



Figure 4.2 Computer lab at Sokoine University (Main campus) showing ICT facilities

Source: Field Data (2016)



Figure 4.3 Computer lab at Jordan University College showing ICT facilities

Source: Field Data (2016)

4.4 Demographic data to the aspect of Tutors/Instructor

This involved five parts; the gender of the respondents, Age, level of education, area of specialization as well as teaching experience of tutors as respondents,

Table 4.4Instructors Demographic Data

Variable/Characteristics	n(%)
Gender	
Male	20(67)
Female	10(33)
Total	30(100)
Age	
15-25	1(3)
26-35	8(27)
36-45	10(33)
46 and above	11(37)
Total	30(100)
Education	
Degree holder	3(10)
Master	9(30)
PhD	15(50)
Professor	3(10)
Total	30(100)
Specialization	
Law	1(3)
Administration & Mgt	5(17)
Business and Accounts	5(17)
Education	3(10)
Agriculture	9(30)
Other	7(23)
Total	30(100)
Teaching experience	
0-10 years	14(47.7)
11-20 years	12(40)
21-30 years	3(10)
31and above	1(3.3)
Total	30(100)

Source: Field Data (2016)

4.4.1 Gender of the Tutors

Gender of the tutors who were involved in the provision of this data for this research was vital so as to avoid biasness The research results regarding the gender of tutor are as presented in table 4.4above,

Table 4.4 above shows that 66.7% of tutors were male while 33.3% of tutors were female. This research findings indicates that male Tutors/Instructor are many in HLI than Female and. This entail that the application of e-Learning in HLIs discussed in this chapter might have greater meaning to male since they were the majority as opposed to

female. Indeed, the gender gap of 33.4% indicates that male occupied more in teaching HLIs than female. Therefore women should be empowered through being employed more as Instructor/Tutors in HLIs in order to create gender balance.

4.4.2 Age of the Respondents

Data concerned the age of respondents were presented into four categories; which includes those who had 15-25 years, 26-35 years, 36-45 years and more than 46 years. The research results regarding characteristics of learners as respondents in terms of their age on application of e-learning in HLIs are as presented in table 4.4 above. Table 4.4 shows that, 3.3% of respondents had come to the age group of 15-25years while other age categories contains the rest as follow 26.7% 26-35 years, 33.3% 36-45 and 36.7% to age of above 46 years. Therefore, the findings show that, respondent's age determine the validity of the study. Being instructor/tutor to university the researcher expected them to provide reliable and valid information on this study since they might have been faced with or experienced in application of e-Learning in HLIs

4.4.3 Level of Education of the Tutor

Data concerned the year of study of tutor were presented into in five categories; which include those who are first year, Second year, Third year, Fourth year and Masters. Table 4.4 above shows that, 10.0% of tutors are degree holder instructor at university, 30.0% of tutor are master holder instructors, 50.0% of tutor are PhD holder and Professor 10.0%. Therefore, the findings show that, majority of tutor had a PhD holder which is 50% which provide remark to reliable and valid information on this study since they might have been faced with or experienced in application of e-Learning in HLIs in Tanzania universities.

4.4.4 Area of Specialization

Data concerned the area of specialization of tutor were presented into in six categories; which contains Law, Education, Agriculture, Business and Accounts Administration and Management and Other field . Table 4.4 above shows that, 3.3% of tutor are from law discipline, 16.7% of tutor from administration and management, 16.7% of tutor from

business and accounts,10.0% of tutor from education discipline,30.0% of tutor from agriculture discipline and 23.3% of tutor from other discipline of study. Therefore, the findings show that, majority of tutor had covered almost all discipline of study in HLIs. Being covered with many discipline of study the researcher expected them to provide reliable and valid information on this study since they might have been faced with or experienced in application of e-Learning in HLIs (HLIs).

4.4.5 Teaching Experience of Tutor (Instructors/Tutors)

Data concerned the teaching experiences of tutor(Instructor) were presented into in four categories; which includes 0-10 year, 11-20 year, 21-30 year, 31 year and above . Table 4.4 above shows that, 47.7% of tutor having 0-10 years of teaching experiences, 40.0% of tutor having 11-20 years of teaching experiences, 10.0% of tutor having 21-30years of teaching experience,3.3%of tutor having 31 years and above of teaching experience . Therefore, the findings show that, majority of tutor had experience of teaching HLIs, the researcher expected them to provide reliable and valid information on this study since they might have been faced with or experienced in application of e-Learning in HLIs (HLIs)

4.5 Instructors/Tutors characteristics and application of E-Learning in HLIs

The study wanted to identify the characteristics of instructors/tutors and application of e-Learning in teaching and learning process in HLIs. In accomplishing this specific objective, the researcher met instructors/tutors at their particular university. The researcher managed to extract information from a total of 30instructors/tutors where the characteristics of instructors in the aspect of age and level of education were able to provide valid information to the study and eventually came out with the findings based to instructors on the application of e-Learning HLIs.

Table 4.5 Application of e-learning in HLIs by Instructors/tutors

Application of e-Learning in HLIs to instructors/tutors	Responses				Total	M (SD)
	4	3	2	1		
I feel confident using the computer	25	5	0	0	30	3.8(0.37)
I enjoy using e-learning in teaching	12	16	1	1	30	3.3(0.70)
I do provide assignment to my students through e-learning	4	20	2	4	30	2.8(0.84)
E-learning increase the quality of teaching because it integrates all forms of media	11	17	2	0	30	3.3(0.59)
I have access to a networked computer at my office	21	8	1	0	30	3.7(0.54)
I use web conferencing/Video chat to communicate/collaborate with my students	0	8	12	10	30	2.0(0.78)
I provide students grades/marks through there email/text message on their phone	6	3	6	15	30	2.0(0.12)
Grand Total Mean	3.00					

Responses key **4:Strongly agree 3: Agree 2: Disagree 1:Strongly disagree**

Source: Field Data (2016)

From Table 4.5 the mean score of 3 responses above 3 shows that e-learning is being applied to large extent while the mean below 3 describe that e-learning is not applied at all. The research findings in table 4.5 reveal that majority of the respondents (grand mean score = 3.243= 75%) agreed or strongly agree that e-learning is being applied in HLIs. Furthermore, the tutors (instructors/tutors) pointed out that the large extent application of e-Learning in HLIs through showing great awareness on the uses of computer to instructors as well as understanding the concept of e-learning itself (Mean score from tutor = 3.50), followed by enjoying using e-Learning for their studies (Mean response = 3.08).The research results further show that the application of e-learning is practiced in HLIs where the tutor agreed that e-learning increases the quality of learning because it integrates all forms of media

4.6. Interview Results

On the other hand, the interview results revealed that, 90% of the interviewee on whether the instructors do use e-learning in the process of teaching and learning for example R1-*"I use e-learning in my teaching schedule the big problem the students do not have good knowledge of computers skills"*, that is why when they were asked to outline in which facility facilitate them to cope with e-learning their replied that they office are well fixed with internet services and computer, so this support the instructors

to be in better way to implement e-learning . Therefore, the study shows that majority of instructors in HLIs applied e-Learning.

4.7. Challenges facing learners and tutors when using E-Learning in HLIs.

The study sought to identify the challenges facing learners and instructors/tutors in applying e-learning in HLIs. To achieve this objective, the established questionnaires and interview guide were administered to the respondents in the study areas. The research findings revealed that 8 challenges were found to be common to both side to learners and instructors in applying e-learning in teaching and learning process in HLIs.

The challenges demonstrated by the instructors were not mainly based on the personal attributes but infrastructure of making e-learning run smooth was a problem. The research findings on the challenges are as presented in Table 4.6

Table 4.6 Learners/ Instructors challenges

Instructors/Learners challenges	Mean response	%
Bandwidth Insufficient internet connectivity,	3.9	98
Inconsistent electrical power	4.0	100
Financial constraints in terms of operating cost of internet services,	3.8	95
Few technical experts to support the e-learning users in HLIs	3.6	90
Computer illiterate for some students,	3.5	88
Shortage of computers in the computer lab	3.7	93
E-learning is not user friendly to people with visual impairment	3.5	88
Grand mean (%)	3.7	93

Response Key 4:Strongly agree 3: Agree 2: Disagree 1:Strongly disagree

Source: Field Data (2016)

The research findings on Table 4.6 indicates majority of the respondents (Grand mean response =3.7(93%) agree or strongly agree that there as various challenges facing the application of e –learning in HLIs. Using likert scale to capture the respondents’ opinions, the research findings in Table 4.5 reveal that the main challenges facing e-learning in HLIs most of instructors and learners are Inconsistent *electrical power (Power cut off)* and *insufficient internet connectivity*. In these two challenges, the respondents replied that they were the most critical problems in ensuring application of e-learning in HLIs, Moreover, other challenges were mentioned such as Few technical experts to support the E-learning users within the particular university, Computer

illiterate to some students due to lack of knowledge of using the computer, Financial constraints in terms of operating cost of internet services and shortage of computer in the computer lab, as the table above describe the challenges for both learners and instructors in application of e-learning in HLIs.

Additionally, the respondents pointed out that there is personal challenges towards application of e-learning in HLIs the findings depicted that various personal challenges have also been associated with barriers to e-learning application in HLIs. Culture of resistance, where instructors accustomed to traditional modes of instruction refuse to change. Instructors are reluctant to put their courses into an electronic format and in some occasions, they prefer the traditional methods despite having access to newer technologies (Nihuka and Voogt 2012). *However some of head of departments describes some of personal challenges were lack of skill with ICT due technology change day today , lack of confidence in using ICT, insufficient knowledge of appropriate software, and insufficient knowledge of how to use ICT equipment's, among instructors*

Literature shows that if instructors do not understand the meaning and impact brought about by e-learning to education, then they are likely to resist or avoid using it resulting in institutional failure to adopt e-learning (Avidov-Ungar and Eshet-Alkakay 2011).

4.8 Conclusion Remarks to the Chapter

This chapter provided the findings of the study conducted to assess the application of e-Learning in HLIs in the three selected HLIs in Morogoro. The study results presented in this chapter are based on the specific objectives of the study. The research findings on demographic data to learners and instructors, e-Learning services which available in HLIs, the extent to which e-Learning is applied in teaching and learning process in HLIs as well as to Tutors/Instructors, challenges faced by Students, Tutors when applying e-Learning in teaching and learning process are well presented in this chapter

CHAPTER FIVE

DISCUSSION OF THE RESEARCH FINDINGS

5.0 Introduction

This chapter presents the discussion of the research findings. The discussion is based on the research findings on each specific objective. The discussion of these research findings also are based on the conceptual framework and literature review

5.1 Reflection of Demographic Data to the Study

The presence data which extracted from the study show participation of male and female to the study this implies that there is awareness toward e-learning to all gender, Furthermore the demographic information inform that the study involved various discipline of such as Law, Education, Business, Accounts, ICT, Agriculture, Administration, Management and other social science studies, These provide remark that the data provided to the study was valid and reliable due to participation of different discipline of study. With regards to demographic data obtained from the learners and instructors the findings stipulates that the attitude toward e-learning in higher learning institutions is positive in mind set but to the aspect of putting that ideas to the implementation is vital challenge to most of institutions due to insufficient ICT infrastructures to the particular institutions hence it wont favor effective application of e-learning to the users.

5.2 E-Learning services which available in the three selected cases of the study

The information obtained from the findings show that the respondents of HLIs were familiar with e-learning services which available in the university the e-learning services which mentioned by the users such as online teaching, online tests, online library, students registration, examination results online time table and payment status. This shows that the majority were familiar with the services and its application of e-learning.

These findings are in line with that of Pirani (2004) which depicted that abrupt development of e-Learning in HLIs has increased the possibilities for learners and

instructors to excel in their learning activities. Learner shows their efforts in learning by using technologies such as text, email, video or audio devices. The existence of e-Learning services in HLIs also provides flexibility to users to be able to use the technology and ensure better teaching and learning process. Thus, distance learning is able to be accelerated to the users to acquire the learning materials due to the accessibility of online e-learning services.

5.3 Learners and Instructors/Tutors characteristics on application of E-Learning in HLIs

The research findings reveal that respondents had positive attitude toward e-learning. Despite of the challenges they faced, most respondents pointed out that they feel confident using the computer in their academic career. Research findings also revealed that e-learning increase the quality of learning. To ensure effective application of e-learning, the university offer wireless internet to the environment surrounding the university itself as way mechanism to enhance the students to be integrated to e-learning. Moreover, it was revealed HLIs have computer lab which is fixed with ICT facility to support the e-learning. For example university do offer to each student the e-learning account so as promote the e-learning. On the other hand the cellular phones possessed by students are being provided with some special bandwidth offer which found at university environment so to facilitate the integration of e-learning to learners and instructors in HLIs, Similarly to the study of Bozerooij (2008) on his study of E-learning strategies of higher education point out that most of HLIs has adopted e-learning strategies in education delivery as way to promote learning, Furthermore he argued that e-learning has achieved in the developed nation due to good computer knowledge to users as well as ICT infrastructures compared to developing country So the study provide a way forward how the developing countries including Tanzania can take initiatives towards ensuring effective application of e-learning including the consideration of learners characteristics.

Generally majority of the respondents (grand mean response= 3; $\frac{3}{4}$ = 75%) of the respondents indicates that there is large extent of application of e-learning in teaching and learning process in HLIs. The findings from the questionnaire are also supported by those from the conducted interviews where by one respondent from Sokoine University who cemented that

“e-learning is highly applied at their institution in teaching and learning processes”.

Another respondent from Mzumbe University mentioned that e-learning were used in teaching and learning process. She said that

“once we join here at university as the student the ICT department provides e-learning account to each student despite of their initiatives but there is challenge lack of knowledge to use e-learning as well as inconsistent of electrical power.

Moreover, application of e-Learning in teaching and learning process in HLIs specifically according to research findings to the case of Mzumbe university. Sokoine University and Jordan college university increase interaction in the learning, e-learning contribute to the shearing of different ideas between tutors and student teachers, e-learning simplify teaching and learning process, e-learning encourage and support independent learning to students. One of the respondents said that:

“E-leaning enables to interact with my student and facilitate independent learning at any time to the learners”

Furthermore, e-Learning can promote international collaboration and networking in education and professional development. There's a range of ICT options from video conferencing through multimedia delivery to web sites which can be used to meet the challenges tutors face today. In fact, there has been increasing evidence that ICT may be able to provide more flexible and effective ways for lifelong professional development for today's instructors and learners in HLI. Flexible time-space accounted for by the integration of ICT into teaching and learning process contributes to increase the interaction and reception of information. One of the interviewee said:

“e-learning helped learners and instructors to interact nicely academically any time compared to previously time where there was no electronic methodology in teaching and learning process”.

It was also revealed that the perceived benefits of using e-learning in HLIs includes making flexibility in teaching-and learning in the aspect of time, helping the distance learning programme, help tutors to be up-to-date, enhancing quality of work by both instructors and learners so the application of e-learning makes institutions more efficient and productive, enhance and facilitate pedagogical activities. According to Evoh (2009) describe that the fact that ICT is accurate, fast and reliable and has the capacity to store and disseminate large information within the shortest periods, makes it a veritable and indispensable instrument for distance education programme. The documentary review and observation, reveals that combining new technologies with effective pedagogy has become overwhelming task for both learners and instructors to apply e-Learning in HLIs. The researcher discovered that, instructors have positive views on the application of e-learning in teaching and learning process at HLIs but they still cannot fully maximize the potential of e-learning in teaching and learning process because they do experience some challenges such as power cut-off, insufficient internet connectivity as well as computer illiterate for some students. Some scholar argued that the current belief is that ICT is not only the backbone of the information society but also an important catalyst and tool for inducing educational reforms that change our students into productive knowledge workers (Blurton ,1999), So ICT is vital tool to ensure e-Learning is taking place in good manner.

The finding coincides with Light (2009) on the role of ICT in enhancing education in developing nations the findings from an evaluation of the Intel reach essentials course in India, Turkey, and Chile found that through ICT student can learn by exploring contents, conducting research, and applying knowledge to real problems. Light comes with giving example in History subject, He describes that students acquired a lot of content through research to learn more deeply and they were more motivated by the new ways of

learning such electronic learning but the problem is the poor ICT infrastructure to the developing nations which do not provide opportunities to the learners.

The information extracted from the study show that learners have positive attitude towards e-learning despites of variations of learners characteristics such as age, gender, area of specialization but findings shows that there is scarce facilities to support e-learning in higher learning while the motivation is higher unfortunately the environment do not support per see the application of electronic learning in HLIs the situation the same applied to the instructors. In fact, application of e-Learning in teaching and learning process in HLIs to be effective achieved it needs sufficient knowledge culture in using ICT facilities for the learners and instructors.

5.4 Challenges facing Learners and instructors when applying e-learning in teaching learning process at Mzumbe University, Sokoine University and Jordan University College

From the findings, at least each respondent mentioned one or more than one challenges facing when applying e-learning in teaching and learning process in HLIs. Majority of the revealed challenges in HLIs were personal and university challenges.

The findings depicted that various personal challenges were given much emphasis according to response grand mean score from responses is 3 which indicates that there is more personal challenges facing learners when applying e-learning in teaching and learning process in HLIs. These personal challenges were computer illiterate for some students and lack of knowledge of learners on e-learning, the learners themselves have poor background in computer application the curriculum of primary school and secondary schools do not shape the learners to be competent in using computer. Instructors also were found to be not strictly in using e-learning to their learners due to the computer illiterate most of learners

Additionally, the inconsistent of electrical power was revealed to be a major constraint which makes instructor and learners uncomfortable in using e-learning. It is a major setback in using e- learning to HLIs. Thus much attention and focus should be given to

this problem. The issue of electricity cut-off was another hindrance factor in the process of ensuring e-learning is taking in the right way. Unreliable power supply as stipulated by the most respondents revealed that the application of e-learning cannot be in smooth, Moreover the findings is inline with the study of Sife, A et al, (2007) on the New technology for teaching and learning Challenges argued that the acceptance of new technology in learning process it promote learning to be effective and convenient the primary challenges to developing countries is poor ICT infrastructure as well as electrical cut-off is among of the barrier toward the succession of e-learning So the developing countries should take multiple initiatives to overcome this challenges to make sure that e-learning it prosper well to this developing countries.

Moreover, the research findings show that insufficient internet connectivity (bandwidth) is a major problem in e-learning application by HLIs. Learners and instructors have been experiencing low internet speed which causes problems in performing some academic works online. besides, the financial constraints in terms of operating cost of internet services was also reported by the learners as among the problem as free internet were found to be located only in specific areas at the University. For example at Mzumbe university wireless internet was found to be located at Library, administration block, ICT office and SAMORA Hall which brought difficulties to access internet by learners when in class or hostel. Students also cannot afford to buy internet bundles.

Few technical experts to support e-learning users in HLIs. Shortage of experts to support the learners who face the problem when using e-learning within the university environment is a big problem in implementation of e-learning For example head of department of ICT at Sokoine university responded that *they have 15 instructors which is responsible to save almost 3500 learners* which is obvious hard for them to save for all students

Another challenge as described by the respondents is the shortage of computer lab. Learners reported that there is shortage of computer in their institutions. Learners fail to practice the e-learning in the process of learning because some of learners don't have personal computer (laptop). They depend on the university computer to do all their

works online. For example through observation Mzumbe university have computers at library for assisting student to do their works. Furthermore, through observation kit was revealed that ICT facilities were not enough in HLIs. This acted as an obstacle towards effective applicability of e-learning in HLIs. The student computer ratio is conceived as indicators of the availability of computers. The ratios of computer were much less favorable. The general trend is that HLIs have thin client computer which is connected to the internet, nevertheless the percentage of desktop and laptop computers tends to be very low HLIs. E-Learning is not user friendly to people with visual impairment respondents commented on that aspect as the challenges to those who are blind hence it is difficult for them to fulfill all tasks which were supposed to be done through e-learning. Thus the application of the e-learning is still a challenge to those learners or instructors who have such problem

The research findings further depicted that limited budget in HLIs towards implementation of e-learning project act as the main challenge towards implementation of e-learning project in HLIs. This is obvious comparing to the country economic and income and is relevant to the study by Best (2004), who indicated that infrastructure necessary for deploying technological resources is lacking in low-income nations. One of the interviewee from Jordan College University said that:

“E-Learning as the aspect ICT in HLIs is the donor’s oriented project which depend fund from the donors”.

Despite the challenges hindering the effective use of e-learning in HLIs, the study revealed that e-learning to some extent is applied, integrated and had added value in teaching and learning process. Instructors wish to see ICT facilities is working smoothly all the time so as e-learning can enhance online learning in good way. One of the interviewee said that:

“To some extent e-learning it has been integrated but not as effectively as we wish or needed due to various problems happening”.

The findings on the issue of challenges is in line with Evelyn Kahiigi (2013) in her study of Collaborative E-learning Approach in Higher Education in Uganda, She argued that the integration of e-Learning into the education system is viewed as one of the responses to meet growing need for high quality education. However, in developing country there is limited amount of knowledge about the use of e-learning to facilitate learning. e-learning is often limited and in some cases lacking due to common problems which most of African nations experience such absence of reliable power supply (electrical) Computer literature and insufficient internet connectivity which leads the adoption of e-learning became difficult to the developing nations which the findings is resembled with the output of this study

As stipulated on the conceptual frame work, the adoption of e-learning in higher learning is influenced by the internal and external factors .The study observed that despite the historical background variation of computer uses /ICT utilization still all the stakeholders have positive attitude towards e-learning. Therefore creating conducive environment to users offer opportunity to users to utilize e-learning effectively. Unfortunately the current environment do not provide flexibility to the users to use it due to unstable ICT infrastructure to all HLIs

5.5 Strategies for effective application of e-Learning in HLIs

To enhance the application of e-learning in HLIs, this study strategizes that classrooms should be well-equipped ICT facilities, university should organize by having power alternative electrical power supply, many team of technical experts as well as to ensure wireless internet connectivity in the whole environment of the university. Moreover, the university should organize staff development programs regularly, sharing skills and ideas among staffs, and college should conduct monthly meetings on discussion regarding ICT use in teaching and learning process. Furthermore Mtebe ,(2014) on his study of “Acceptance of e-learning Solution in Higher Education” stressed that developing countries should invest more in ICT Infrastructure, The degree of application of e-learning to these developing countries will be determined by having

strong ICT policy which integrate with education policy as well as the availability of ICT infrastructure in line with having reliable power supply to this countries.

5.6 Conclusion Remarks

Conclusively this chapter provided the discussion of the research findings. It discussed what was revealed after analyzing the research data in relation to the research topic, conceptual framework and literature review. Furthermore the chapter provided the interpretation of the study findings.

CHAPTER SIX

SUMMARY, CONCLUSION AND POLICY IMPLICATION

6.0 Overview

This chapter aims at concluding what has been discussed in the preceding chapters and making necessary conclusion and recommendation about the application of e-learning in HLIs in Tanzania. This chapter also provides the way to areas for further research to be conducted.

6.1 Summary of the Study

The study assessed the application of e-Learning in HLIs in Tanzania. The data for this study were collected using questionnaire, interview and observation from Mzumbe University, Sokoine University as well Jordan University from Morogoro region. A sample size of ninety respondents comprising of thirty instructors and sixty learners/students were used in this study. The collected data were analyzed both qualitatively and quantitatively. The research findings reveal that learners and instructors have positive attitude towards e-learning. Nevertheless the study identified the challenges toward effective application of e-Learning in HLIs in teaching and learning process among them include: inconsistent power supply, insufficient internet connectivity, few expect to support the e-learning users in HLIs, computer illiterate for some students, inadequate ICT infrastructures, financial constraints in terms of operating cost of internet services and shortage of computer in computer lab, poor government support (financially).

6.2 Conclusion

This section consist the conclusion from both, literature and research findings of this study. The reviewed previous literatures on adoption of e-learning in HLIs conclude that the application of e-learning in HLIs on teaching and learning processes in developing nations was questionable. That is why it was worth for the study to be conducted in Tanzania's HLIs to assess its application.

Besides, from the research findings and its discussion, the study concludes that, despite the adoption of e-learning in higher learning for teaching and learning processes, its application is confronted with several challenges. Among the revealed challenges from this study include; inconsistency of power supply, insufficient internet connectivity, few experts to support users, computer illiterate users and operating cost. The research findings from this study further conclude that successful implementation of e-learning, the e-learning in HLIs particularly in teaching and learning requires integrated and co-operative policies such as education policy, energy policy as well as national ICT policy.

Moreover, the institution policies should be integrated with e-learning by providing a conducive environment to the users. The user of e-learning should be provided with constant power supply as well as sufficient internet connectivity (stable internet connectivity) to allow accessibility to learners and instructors in gaining knowledge regarding e-learning. Additionally, the cost of operating should be reduced for learners to afford using e-learning. Cost reduction will also ensure availability of technical experts in e-learning among the HLIs in developing nations including Tanzania.

6.3 Implications of the Findings

The research findings of this study and its theoretical review have the implication on the theory used as well as on the policy regarding the application of e-learning in HLIs. This study related the research findings and theoretical issues to ascertain whether the theories were adequate enough or there is a gap between the findings and theoretical parts in ensuring effective application of e-learning in HLIs in Tanzania. The theoretical and policy implication of this study are as stipulated in the subsequent section here.

6.3.1 Theoretical Implications

The findings from this study revealed that the application of e-learning in HLIs had obstructed like inconsistency of power supply in relation to application of e-learning in HLIs. This entails that the theory of Diffusion of innovation does not tally with the real implementation; the administrators seem to work in lower levels of the Diffusion of innovation theory; it failed to provide opportunity (conducive environment) to the users

to have flexibility to utilize e-learning in HLIs. Moreover other factor to consider in for better application of e-learning is to ensure sufficient internet connectivity, availability of experts to support users as well as regulation of operating cost of internet services (bandwidth). There is a need to strengthen the institution policy which will consider effective application of e-learning in HLIs.

The study findings indicate that the HLIs had illiterate computer users which were caused by poor curriculum in computer usage from primary school. This is an indication that, The majority of higher learning lack the competence of using electronic learning due to poor background of using ICT facilities to learners hence the application of e-learning is still primary stage. The theoretical aspect, stipulates that in order for users to use the technology there should be a supportive environment to the users to utilize the technology so TAM is a model which show users come to accept and use a technology Davis (1989). In general the findings revealed that there is a slit between the theory and practices of application of e-learning in HLIs.

6.3.2 Policy Implications

The research findings of this study have also policy implication. The research findings and discussion of this study reveal that there is gap on National ICT policy particularly on the application of e-learning in HLI. The National ICT policy does not provide clear remarks on how e-learning can be coordinated to HLIs due to unclear coordination of the policies. Thus, the research findings require a review on Education and Training Policy (ETP) of 1995 in order for them to cope with the drastic changes that are happening in the world. ETP must reflect currently issues taking place. Moreover, the integration of policies is needed in order for e-learning to be successful. For example coordination of several policies such energy policy, education policy as well as ICT is of paramount important. Thus, the government should put proper ICT policy in education in order to make effective application of e-learning in HLIs. Moreover ministry of education should review education curriculum to integrate ICT from primary education so that learners can be competent in using computer when joining higher education.

These will assist them to adopt electronic way of teaching and learning. Distance learning can take place easily because students will have good background of using computer teachers.

6.4 Academic Significance of the Study

Academically, the study has number of significances. Firstly, the study has contributed the body of knowledge regarding the extent to which e-learning is being applied in teaching and learning process by HLIs in Tanzania which was missing in the previous studies. The study identified the e-learning services which is available in HLIs such online teaching, online tests/exams, online library, student's registration, examination results, online time table, and payments status which previous studies didn't identified that service, On the other hand this study reveals that learners and instructors show positive attitude in e-learning use despite of the revealed setbacks. The identified challenges on applying e-learning in Tanzania's HLIs and their proposed strategies will be used as guideline and way forward to increase the usage of e-learning and subsequently advance quality of HLIs in Tanzania. The findings of this study might be useful to learners, tutors, researchers as well other practitioners in ensuring that e-learning is emphasizes and integrated in teaching and learning process in order to improve the quality of education in Tanzania HLIs

6.5 Limitations of the study and suggestions for further research

The study was conducted in Mzumbe University, Sokoine university and Jordan college university Morogoro Region, focusing on learners and instructors in application of e-learning HLIs. The findings of this study were limited to exploratory research that it was confined to Mzumbe, Sokoine and Jordan University. Thus, the generalization possibility is low and that the findings may not reflect the characteristics of the entire HLIs on application of e-learning in Tanzania. Therefore further study can be conducted to capture many HLIs with larger sample size as well as wider geographical coverage in order to increase the reliability and ability to generalize the research findings.

The researcher calls upon interested researcher in the subject matter to conduct more comprehensive studies to other colleges on application of e-learning as well as to assess the uses of e-Learning in other colleges because the study conducted only in HLIs so more study is needed to assess the uses of e-learning in other education institutions .

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APPENDICES

Research Questionnaires on the "APPLICATION OF e-LEARNING IN HIGHER LEARNING INSTITUTION"-Mzumbe University, Sokoine University of Agriculture and Jordan University College

Dear, participants

My name is **Willy Innocent**, a master degree in Public Administration student at Mzumbe University. I am currently conducting a research titled “Application of e-Learning in HLI- A case of the selected three Institutions in Morogoro region.

The study is under the supervision of Dr **Orest Masue**. Therefore I request you to spare your valuable time to fill this questionnaire so that I can get useful information to accomplish the study being carried. Please feel free to fill this questionnaire and I assure you and your office that the information provided will be kept confidential and will be used for academic purposes and not otherwise

Thank you for your participation and interest in this research.

Your participation in this study will be greatly appreciated.

Willy Innocent-MPA 2014-2016

[Email.willz.inno@yahoo.com](mailto:willz.inno@yahoo.com) mhemawilly@gmail.com

Part one- Questions related to demographical data:

For each statement, please put (✓) beside the item that best fits your answer.

Please answer the following questions:

PART A: PERSONAL IDENTIFICATION

1. Gender :(a)Male () (b)Female ()

2. College Year: (a)1st ()

(b) 2nd ()

(c)3rd ()

(d) 4th ()

(e) Master level ()

3. Age:-

a.15-25 ()

b.26-35()

c.36-45()

d.46 and above ()

4. Name of your Faculty: -----

5. Area of specialization

a. Law ()

b. Administration and Management ()

c. Business and Accounts ()

d. Education ()

e. Agriculture ()

f. Others.....

PART B:

Please circle your responses on scale of 1- 4

Learners characteristics and application of e-Learning in HLI

s/n	Application of e-Learning to students	Strongly agree	Agree	Disagree	Strongly disagree
6	I feel confident using the computer	4	3	2	1
7	I enjoy using e-Learning for my studies	4	3	2	1
8	I believe that e-Learning gives me the opportunity to acquire new knowledge	4	3	2	1
9	I normally do some tasks via e-Learning at my university	4	3	2	1
10	I believe that e-learning enhances my learning experience	4	3	2	1
11	E-learning increases the quality of learning because it integrates all forms of media	4	3	2	1
12	My university offer most of courses through e-Learning	4	3	2	1
13	I use the web to access University based services eg enrolment,sign up for tutes, payement fees,course registration	4	3	2	1
14	I use social networking software eg Facebook, Twitter, etc on web to communicate/collaborate with other students	4	3	2	1
15	I download or access online audio/video recordings of lectures	4	3	2	1

16. What challenges do you face as a student when using e-Learning (eg) Learning method/Doing Assignment?

- a)
- b)
- c)
- d)
- e)
- f)

Research Questionnaires on the "APPLICATION OF e-LEARNING IN HIGHER LEARNING INSTITUTION"- Mzumbe University, Sokoine University of Agriculture and Jordan University College

Dear Participant: Instructor/Tutors

My name is **Willy Innocent**, a msaster degree in Public Administration student at Mzumbe University. I am currently conducting a research titled “Application of e-Learning in HLI- A case of the selected three Institutions in Morogoro region.

The study is under the supervision of Dr **Orest Masue**. You are requested to spare your valuable time to fill this questionnaire so that I can get useful information to accomplish the study being carried. Please feel free to fill this questionnaire and I assure you and your office that the information provided will be kept confidential and will be used for academic purposes and not otherwise

Thank you for your participation and interest in this research.

[Email.willz.inno@yahoo.com](mailto:willz.inno@yahoo.com) mhemawilly@gmail.com

Part one- Questions related to demographical data:

For each statement, please choose beside the item that best fits your answer.

Please answer the following questions:

PART A: PERSONAL IDENTIFICATION

1. Gender:

- a) Male
- b) Female ()

2. Age:-

- a) 15-25
- b) 26-35 ()
- c) 36-45
- d) 46 and above

5. Level of education

- a) Degree Holder
- b) Master Degree ()
- c) PhD Holder
- d) Professor

6. Area of specialization (circle the appropriate letter)

- a) Law
- b) Administration and Management
- c) Business and Accounts ()
- d) Education
- e) Agriculture and Livestock
- f) other field-----

7. Teaching experience

a) 0-10 years

b) 11-20

()

c) 21-30

d) 31 and above

PART B.

Instructors/Tutors characteristics in application of e-Learning in HLI

s/n	Application of e-Learning to Instructors/Tutors	Strongly Agree	Agree	Disagree	Strongly disagree
8	I feel confident using the computer	4	3	2	1
9	I enjoy using e-Learning in teaching	4	3	2	1
10	I do provide assignment to my students through e-Learning	4	3	2	1
11	E-learning increases the quality of teaching because it integrates all forms of media	4	3	2	1
12	I have access to a networked computer at my office	4	3	2	1
13	I use web conferencing/Video chat to communicate/collaborate with my students	4	3	2	1
14	I provide students grades/marks through they email /text message on they phone	4	3	2	1

15.What challenges do you face asa Instructor/Tutors when using e-Learning

- a)
- b)
- c)
- d)
- e)

" Thank you for your cooperation"

QUESTIONNAIRE FOR ICT DEPARTMENT IN HLIs

(i) General characteristics of respondents

Fill the responded number in the bracket

(a) Gender of the respondents

1= Male ()

2= Female

(b) Age of respondents

1= 25-29

2= 30-34

3= 35-39 ()

4= 40-44

5= 45-49

6= 50 +

(c) Level of education

1= Secondary School

2= Certification

3= Diploma

4= Bachelor Degree/Advanced Diploma ()

5= Post Graduate Degree

6= Master Degree

7= PHD

8= Others Mention

(d) Which department you are working

1= Social science

2= Finance and Trade

3= Law

4= ICT ()

5= Agriculture

6= Education

7= Computer science

8= Other

(e) What is your working experience?

1= 1-5 Years

2= 6-10 Years

3= 11-15 Years ()

4= 16-20 Years

5= 21 Years

ii. Section: B

1. When the university adopted e-learning? (Year).....

2. Mentions e-learning services that learners can access in your university

a)

b)

c)

3. What kind of technical support is available in the university to help learners/ tutors use e-learning in their everyday teaching activities

a)

b)

c)

4What kind of training opportunities you do for instructors /learners to acquire more skill in application of e-learning?

a)

b)

5. What do you think are the major challenges towards effective use of ICT in your university in enriching curriculum implementation?

a)

b)

c)

6. Which strategies do you employ to improve the use of e-learning in your university?

a)

b)

c)

Thank you for participation

Research Questionnaires on the "APPLICATION OF e-LEARNING IN HIGHER LEARNING INSTITUTIONS"- Mzumbe University, Sokoine University of Agriculture and Jordan University College

Dear Participant:

My name is **Willy Innocent**, a master degree in Public Administration student at Mzumbe University. I am currently conducting a research titled “Application of e-Learning in HLI- A case of the selected three Institutions in Morogoro region.

The study is under the supervision of Dr **Orest Masue**. Therefore I request you to spare your valuable time to fill this questionnaire so that I can get useful information to accomplish the study being carried. Please feel free to fill this questionnaire and I assure you and your office that the information provided will be kept confidential and will be used for academic purposes and not otherwise

Thank you for your participation and interest in this research.

Email.willz.inno@yahoo.com

A. Biographic data

1. Sex: male [], female []
2. Age_____
3. Number of years in the post_____
4. Academic qualification_____

B. Interview questions

1. How the application e-learning in HLIs promote teaching and learning process?
2. How do you empower and encourage tutors to use e-learning in their daily teaching and learning activities?

3. What kind of technical support is available in the university to help tutors use e-learning in their everyday teaching activities?
4. What kind of training opportunities you do for instructor /tutors to acquire more skill in application of e-learning?
5. What do you think are the major challenges towards effective use of ICT in your college in enriching curriculum implementation?
6. Which strategies do you employ to improve the use of e-learning in your university?

Thank you for your participation

Research Questionnaires on the "APPLICATION OF e-LEARNING IN HIGHER LEARNING INSTITUTIONS"- Mzumbe University, Sokoine University of Agriculture and Jordan University College

Dear Participant: Head of ICT

My name is **Willy Innocent**, a master degree in Public Administration student at Mzumbe University. I am currently conducting a research titled “Application of e-Learning in HLI- A case of the selected three Institutions in Morogoro region.

The study is under the supervision of Dr **Orest Masue**. Therefore I request you to spare your valuable time to fill this questionnaire so that I can get useful information to accomplish the study being carried. Please feel free to fill this questionnaire and I assure you and your office that the information provided will be kept confidential and will be used for academic purposes and not otherwise

Thank you for your participation and interest in this research.

Email.willz.inno@yahoo.com

A. Biographic data

1. Sex: male [], female []
2. Age _____
3. Number of years in the post _____
4. Academic qualification_____



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REF. No. MU/OF/S.2/25/Vol.III/511

10th February, 2016

Head of Department of Public Services
and Human Resource Management,
School of Public Administration and Management (SOPAM),
Mzumbe University,
P. O. Box 2,
MZUMBE.

RE: PERMISSION TO COLLECT DATA FOR MR. WILLY INNOCENT

The above heading refers.

I am glad to inform you that your letter with Ref. No. MU/SOPAM/DHR & PSM/Vol. I on data collection for the study titled: **Application of e-learning in higher learning Institutions, A Case of three selected Universities in Morogoro Region Mzumbe University, Sokoine University and Jordan University College** for your student **MR. WILLY INNOCENT** has been accepted.

On reporting day he should consult the Director of Human Resource and Administration (DHRA) who will direct him to the proper staff for further details.


Heneriko Karwenji,
FOR: VICE CHANCELLOR

Cc: Director of Human Resource and Administration (DHRA)
Mzumbe University.

SOKOINE UNIVERSITY OF AGRICULTURE



**OFFICE OF THE DEPUTY VICE CHANCELLOR
(ADMINISTRATION AND FINANCE)**

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Ref. No. SUA/ADM/R.1/8 Vol

Date: 15.01,2016

**TO: WHOM IT MAY CONCERN
SOKOINE UNIVERSITY OF AGRICULTURE
MOROGORO**

RE: PERMISSION FOR DATA COLLECTION

May I introduce to you Mr. Willy Innocent a bonafide student from Mzumbe University.

At the moment he is collecting data for his dissertation, he has opted to conduct a study on the topic entitled:

Application of e – learning in higher learning Institution A case of three selected Universities, Mzumbe University, Sokoine University of Agriculture and Jordan University College.

Please assist him accordingly.

Yours sincerely,

H.W. Kyando-Gellejah

**For: DEPUTY VICE CHANCELLOR
(ADMINISTRATION AND FINANCE)**

c.c: Mr. Willy Innocent
Student – Mzumbe University

The

Researcher, **Willy Innocent Mhema** was born at Kibena hospital in Njombe regional. He attended a primary education at Lunguya Primary School in Mtwango Njombe District from 1993 to 1999 and thereafter he joined Mpechi Vocational training centre pursuing Electrical Installation 2000-2001 There after he joined Mtwango secondary school in Njombe regional, from 2002 to 2008 for his secondary education O-level and Advance. However, in 2008 he joined university of Dodoma pursuing Bachelor of Arts in political science and history to 2011, from 2012 he joined VETA Mbeya for distance learning to upgrade Electrical Installation where 2013 awarded Grade one for electrical installation, In 2014 he was admitted for Masters degree in public Administration at Mzumbe University.