

Information and Communication Technology (ICT): An Effective Tools for E-learning

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Abstract

This research is based on the premise that, there is still a need to understand whether improvement in technology is appreciated, fully supported in the vision of contributing to the academic business in Africa. The aim of this research is to explore the extent to which the incorporation of technology in teaching and learning has so far benefited teachers and learners in Africa. The objectives of the study is to highlight the benefits of using e-learning system to find out whether new technologies have enhanced teaching institutions in Africa.

Keywords: Information and communication technology (ICT), E-learning system, teaching institutions, Africa

1- Introduction

The New Partnership for Africa's Development (NEPAD) is one of the organ of the African Union (AU). It aim is to put Africa in the path of socio economic development. The overall goal is the development of an integrated socio-economic development framework for Africa. The NEPAD e-Africa Commission is the NEPAD Task Team responsible for developing and implementing ICT projects, one of which is the NEPAD e-Schools Initiative. According to Sandy Malapile (2007) the aim is to equip all African primary and secondary schools with ICT equipment, such as computers, radio and television sets, phones and fax machines, communication equipment, scanners, digital cameras, copiers, etc., and to connect them to the Internet.

This study set to explore the role of ICT on e-learning in Africa and it implication on Africa's development. More specifically, this study investigates the effectiveness of developing electronic learning system (e-learning) in line with the objective of the New Partnership for Africa's Development (NEPAD). NEPAD is a programme of the African Union (AU). It aim is to put Africa in the path of socio economic development. The overall goal of NEPAD is the development of an integrated socio-economic development framework for Africa. The NEPAD e-Africa Commission is the NEPAD Task Team responsible for developing and implementing ICT projects, one of which is the NEPAD e-Schools Initiative. In line with the above Integration of technology in teaching and learning has become a priority for many institutions, with the primary objective of empowering students to become computer skilled end-users with sound knowledge of the most recent technological platforms (Highton, 2009). To convey a well-adapted e-learning teaching and learning system, Mbithi (2014) inferred that it calls for more insights of the adaptability and this depends on the philosophy of approach, the structure, and the culture of the institution adopting e-learning. Vice-versa, e-learning implementation should also get into the practicability of the learning and management system in place and further improve the system to more efficiency and effectiveness. Conflicts in adaptation from both current system and e-learning sometimes arise to the extent of challenging adaptability and later ineffectiveness in the system output. Little is known of preparedness, adaptability, adoption and a comprehensive e-learning system to function effectively at African institutions in order to support the existing structure of the education system. There is therefore a need to know the preparedness, adaptability, adoption and a comprehensive e-learning technology system tools to effectively benefit the institution as a whole. So far, the integration of the e-learning technology to support teaching and learning has brought many benefits to both students and users alike.

2-LITERATURE REVIEW

Mbithi (2014) argued that, the most appropriate definition of the e-learning in reference to this research study is as defined by Helen (2013:2) who perceives the e-learning as a learning approach that requires the use of basic information technology resources mainly the computer as the central processing system of activities and composed of hardware and software, and a number of external peripherals input and output data as well as network connections for data exchange with broad external environment. Intranet network and the Internet are the network connections in reference. E-learning content is part of data exchanged within e-learning system. Minaar (2011:84) sees e-learning to be the use of the Internet for accessing learning contents by students with more interactive lectures as a valuable tool facilitating help to reach the students individually in an effective way and at any given time. The system increases lecturer-student interaction which results to student more engaged individually and responsibly into the learning process and the gaining of knowledge vital to develop student personal skills.

The internet provides unlimited access to learning content at any time, in a record time of access to information and knowledge exposure. In e-learning, individuals can share their knowledge and opinion of understanding with others, individually or collectively simply with a single click on a command button. Knowledge sharing can be done by publishing narrative comments, dialogue, multiparty interactive discussion and video conferencing. Individuals acquire data, information, knowledge and skills. With e-learning, learners require a computer or an Internet connecting cell phone and available Internet access network.

With reference to system development, Kanter (2012:399) claims that e-learning system is faster to be implemented in comparison with the traditional system analogue, opposed to the digital. However; if e-learning is not properly implemented, it can be exclusionary. E-learning users should be put in training for them to be efficient and effective in the use of the system at the best.

In achieving e-learning efficiency, academic management team should discuss with its departments the selection of e-learning strategies that work effectively for teaching and learning (Kelkar, 2012 and Rosenberg, 2012).

According to Wang, H.K., Wang, H.T., Wang, L.W and Huang (2011:1-4), main problems to e-learning environment adaptability exists by lack of personalisation. Most of education centres were never built with e-learning project in mind. E-learning systems need to be adapted to suit preferably an existing infrastructure. Furthermore, in a learning environment Wi-Fi hot spots free area layout should be promoted. Should these Wi-Fi hot spots also be accessed from laboratories, certain restrictions to the relevant information for students to the sole reason of learning should be imposed? Wang et al. (2011:4) supports some of the above statements by suggesting the matching of the education system to a specific learning implementation or bringing a change to learners' preferences to match the e-learning system.

Rao (2010:114) defines e-learning as dynamics of instructional information that is delivered electronically through the web, by means of a firm's intranet, extranet, or through portable devices such as CD-ROM. On-line education is the most popular e-learning type which envisages almost all activities supported by electronic systems and that goes as far as tests activities set in interactive. E-learning is suited to distance learning and flexible learning that capitalises on multimedia, features of video and audio that illuminates topics, navigation that is self-paced including hints, and hyperlinks to affiliated topics (Rao, 2010 ; Khan, 2013).

E-learning is expressed as the learning systems mediated by electronic technology for the purpose of training or development in an organisation (Schiller, 2013; Rao, 2010:114). Schiller (2013) states that; there is no universally accepted definition for e-learning. This can be characterised when it admits the use of distributed technology products (such as CD-ROMs) that do not require the user's computer to be connected to a network. In opposite, e-learning is exclusive when excluding these products and only considers learning delivered through the internet or an intranet (which approach could be termed online learning).

E-learning is seen as of Information Communications Technology (ICT) usage that supports and enhances teaching and learning in education, that assumes students with computer skills and having the ability to study online, with institutions anywhere local or abroad away from the comfort of their living space (Pascal, 2013).

E-learning is also expressed as a form of teaching and learning that supports communication between lecturer and learner with tailor-made programmes conveyed via the computers or mobile devices and aided by quizzes, games, as well as video to enhance learning opportunity. E-learning covers training that deliver just-in-time information and guidance

from experts in both education programme and set of technology used (Chadwick, 2013).

E-learning as a digital method of learning may be used as a standard method but not as a substitute to learning methods that do not make use of digital platforms. Lipshitz and Parsons (2013) defines e-learning as a general term to computer enhanced learning that is used interchangeably in many ways. In many circumstances, advanced learning technologies making use of multimedia and networked technologies are associated with e-learning. E-learning is an interactive way of learning through Information Communications Technology and computer networks (Ortiz, 2013).

Open educational or open content resources should be analysed to understand the future of tertiary education around e-learning. Pascal (2013:1) brings forth failures as a result of not having effective e-learning system in place which temporarily overshadowed the hope of gaining a wider and flexible access to tertiary education, and also shown by innovation with cheap costs.

Dzakiria, Kasim, Mohamed, Christopher and Utara (2013:112), highlight some limitations to effectiveness of e-learning on-line open sources, which are a lack of computers or cell phones with Internet connectivity for users of e-learning system.

Mohamadzadeh, Farzaneh, Mousavi, Ma'ghbal and Moenikia (2013: 149) underscore the challenges presented in the Information Communications Technology (ICT) usage; when it comes to an e-learning environment. In fact, as the e-learning organisation aims to reach its students far and wide, there is a great difference in performance of students, those with ICT access facilities compared to those reaching on-campus lectures.

An e-learning institution is encouraged to have well guided policies defining its ethics and values; visible in its legal outlines that regulates the exchange and distribution of e-learning content, there are ethical concerns of plagiarism, licensing of content and electronic voyeurism (Anitha and Harsha 2013:193-199; Dzakiria et al., 2012; Pascal, 2013:1). The choice of an e-learning system should compress the learning programmes with learning tools that are useful in achieving learning outcomes in a space of time that may be said to be limited (Nilsson, Ostegren, Fors, Rickenlund, Jorfeldt, Caidahl, and Bollinder , 2012:1-9). E-learning may be based on different ways to enhance learning, though little is known as to how optimally it is being utilised (Nilsson et al., 2012 ; Lucas, 2013).

Another important aspect in the effectiveness of e-learning is that the quality of e-learning programmes may be influenced by factors such as interaction levels defined by interactions student to student, student to

instructor, and student to learning program (Dzakiria, Don, and Abdul Rahman, 2012).

.Magboo and Schwab (2013:2) states that e-learning strategy development is an essential technology “*for blended and online learning*”. Blended learning that is not backed by the right infrastructure support at the end side of it can be a complete mess. Issues of bandwidth, services hosting, and lecturer / facilitator access to the online e-learning system are critical in making the blended / online learning a success.

Institutions adopting e-learning educational program, should avoid not to have a solid strategy in place. When there is no vision, the institution will not know where it is going as any road will take it there (Rosenberg, 2012). Most common mistakes that organisations may be faced with in choosing an e-learning strategy are:

Equating technology with strategy, confusing strategy with tactics, looking at development and delivery rather than the bigger business picture, focusing on creating a traditional offer online, going it alone failure to reach consensus, misreading executive support, thinking this is part-time or short term work, ignoring risks; weaknesses and threats, failure to manage change (Rosenberg, 2012:1-3; Cabezas, 2013). E-learning is different from learning methods that do not use on-line or digital platforms hence the need to bring in methods of self-discipline; and motivation to the learners. In the selection of an e-learning strategy, different abilities and qualities of students should be taken into consideration (Freed, 2013).

3-Knowledge Management

Knowledge Management provides support for the administration team or employees as they do their job; for example; document management, knowledge capture, information portals, search tools.

There is no single e-learning method that is best to every learning need. Blended learning is encouraged. Blended learning programs that combine e-learning and traditional methods of learning may provide convenience, speed and cost-effectiveness of e-learning, with the personal touch of traditional learning.

There is need to align business and teaching and learning goals within e-learning vision to maximise e-learning benefits. (Rosenberg, 2012; Cabezas, 2013) states the need to make adjustments for a better course by collective discussions in choosing an e-learning strategy that may prove to be effective in an e-learning system.

Academic e-libraries: encouraging a culture of e-learning scholarship amongst students, in accessing libraries' e-services, e-learning materials, and e-research within the e-learning environment (Nfila, 2009).

E-learning support to staff: in the provision of online academic tools for teaching and learning with students, web collaborative learning and virtual environments, are additions in support of traditional lecturing methods (Highton, 2009). In working with colleagues: the collaborative and interactive forms of e-learning are explored. There is an opportunity to design and develop e-learning resources for learners (Sweeney, 2013; Highton, 2009). Staff and management support in e-learning institutions should be provided with tools or facilities that support the delivery of academic lecturing of high quality (Siragusa, Dixon and Dixon, 2013).

On the other hand e-learners may end up with a bogus certification or degree if the providers of e-learning education are not authenticated, accredited and quality assured to be the providers of such a qualification. Social aspects of real classroom environment are missing in an on-line learning environment when it comes to face to face interaction. Certain skills require hands on training that you cannot get such skills through e-learning, like computer repair, plumbing, welding. E-learning is seen not to be for everyone. The fact that there is vast content on-line does not mean one may learn from it. It takes motivation and development of good study habits (Khan, 2013).

3.1 Information and communication technology challenge

In e-learning initiatives, a challenge may come in when it comes to information and communications technology (Mutula, 2013). There should be concerted efforts in the entire education process bringing in required technological resources to an e-learning system.

A lack of alignment of libraries in giving the roles that enhance e-learning needs can be considered as a challenge. Libraries should be designed in such a way that they are actively involved in e-learning systems (Eke, 2010). As libraries are at the centre of a higher education institution, they should not be denied the roles of giving in inputs that enhance e-learning. Challenges for learners when it comes to e-learning, are that; institutions may require that facilitation or training be completed after official hours and this may mean that students may not have access to computers. It is stipulated that *“this potential problem can however, be easily averted by mobile learning, because it is readily available and accessible”* (Chadwick, 2013).

3.2 Challenges in adoption new technology for Platform development

There is a problem of a constantly changing higher education environment that calls for the adoption of emerging technologies in Teaching and Learning, at the centre of a new group of learners with different learning needs altogether. Higher education institutions are obliged to provide

quality education through effective use of technology (Thomas, 2010: 214-224).

The changes in adapting to the digital format in Teaching and Learning is seen to be slow due to lack of technological supported skills and collaboration with peers in appraisal of strategies of those who are performing at their best in their practices (Thomas 2010: 214-224; Dehbi, Talea and Tragma, 2013: 10-15). This makes learners get limited support from the facilitators or lecturers with limited skills required for student skills development optimally.

Failure in adopting e-learning or digital learning systems in support of traditional methods that do not use electronic platforms may be a real time challenge. Thomas (2010) further cites a lack of “*a changing knowledge and communication-based society*” as a hindrance in addressing learner needs in higher education.

Lack of scholarship of teaching and learning; the development of transparent learning processes should incorporate survey feedback mechanisms and define learning as to how it is attained (Thomas, 2010).

3.3 Challenges in developing and implementing e-learning for translations

The way you may phrase instructions may differ from country to country. For Example English from United States is different to English in the United Kingdom, or translating from a different language to English. There is need to conduct research when it comes to translating context “*word-for word*” (Ferriman, 2013).

Strategies that make translating e-learning an easier process (Ferriman, 2013), are:

- **Instructional method**

When creating e-learning courses, long sentences, slang words should be avoided. Main points should be kept short and concise.

- **Language**

The audience should be kept in mind when creating e-learning. For example, when you are in United States of America (USA) and creating a course for English speakers in the Republic of South Africa (RSA), “*you will want to use proper grammar rules for that particular region (organisation versus organisation)*”.

- **Visual design**

When e-learning content is used from one English speaking country to another, avoid written texts to images. Cultural connotations should also be taken into consideration regarding colours and symbols.

- **Audio**

“Use professional voice talent to convey both professional and personal tone” to accommodate learners of diverse base.

- **Development**

In considering length of texts and words across languages, different style sheets may be used in defining best font properties.

- **Outsourcing**

“If you are leveraging an outsourced team of translations, keep the content concise in the same source files so that the translation team can identify the text that needs to be localised”.

3.4 E-learning technologies

E-learning Hub in the cloud

A hub is explained as a platform that supports virtual learning groups, the groups that converge and interact over the web. Through web collaboration, an e-learning hub makes it easy for participants to use advanced features through use of media, virtual setting simulations, take on-line attendance to a meeting and interactivity. A hub is an emerging technology that uses advanced features in websites; making use of web 2.0, web 3.0 and higher in fostering engagement, motivation and formation of e-learning or on-line communities or groups (Malik, Perova, Hacker, Streveler, Magana, Vogt and Bessenbacher , 2011: 665-681; Dehbi, Talea and Tragha, 2013: 10-15). Furthermore, Hubs are explained as platforms created by HUBzero, a group created by Purdue’s Hub Technology Group in partnership with NSF-Sponsored Network for Computational Nanotechnology (NCN), to support the first HUB, NanoHub.org. As stated by HUBzero, a *“Hub is a dynamic website with many built in open packages supporting web scripting, Content Management Systems (CMS), content storage and user statistics”*. Hubs are a foundation of Cloud Computing (Malik et al., 2011:665-681).

Malik et al. (2011) and Dehbi et al. (2013) states Cloud Computing within the context of e-learning as a web based collaborated environment with features such as:

- Seminars, webinars, workshops, presentations; showcasing a series of on-line presentations.

- New resource uploads: which are shown as new under or next to the home page.
- Citations and ratings: quality control on-line with a rating scale to specific resources, enhancing on-line community building.
- Content tagging: on-line content is categorised by linking it to source administration.
- Building WiKis and Blogs: topic pages created in the format of wikis supports knowledge creation, and groups access such topic pages on-line.
- Collaboration: registered members may create and manage their membership to specific on-line groups
- User support areas: where users may find help on-line.
- Usage of metrics: Hubs report user's resource metrics.
- News and events: users may post activities on hub calendar.
- Feedback mechanism: users may take surveys, post suggestions or share ideas on-line.

A hub with customised features in Teaching and Learning may be the most suitable one as a digital platform habitat (Alavi and Mohan, 2013: 2990 - 299).

3.5 Applicability of Cloud Computing in education

Trends or changes in the educational environment have seen an increase in demand to automate the on-line environment with issues of access to e-learning content that can be said to be fast, accurate, anywhere and at any time. The growth of the mobile technology has presented the challenge of managing information around e-learning with users expecting record time access to information. Cloud Computing helps in development of robust on-line systems that may keep on being improved and updated on-line (Naik, Ajay and Kolhatkar, 2013:11-15).

3.6 Types of e-learning Clouds

Cloud Computing concurs with e-learning as the use of hardware and software that get delivered as services over a network or the Internet (Naik et al., 2013:12; Thomas 2010:214-224). E-Clouds as services constitute the following by Naik et al. (2013):

- Private cloud: delivers cloud services to restricted consumers in an institution.

- Public cloud: delivers cloud services to unrestricted groups of consumers.
- Community cloud: the handling of cloud infrastructure supporting a group with shared concerns is in this category.
- Hybrid cloud: enables the composition of more clouds brought together by technology but as separate entities, like; private and public clouds.

3.7 Cloud computing as e-learning in teaching and learning

Cloud computing completes the triangulation process in the development and establishment of an on-line academic management system comprising support to students, academic administration and e-learning in teaching and learning.

Many colleges have gone the paperless admission route, where the entire application process is handled and managed through the web including cancelling and fee payments for courses. Across the higher educational space is seen the emerging technology of implementing electronic smart card readers spanning the entire institutions, dynamic higher institutions of learning developing and implementing e-learning systems with websites and portals, faculty portals, student admission portals, student information systems for student life cycle, career management, learning management system, document management system (Naik et al., 2013:13; Dehbi, Talea and Tragha, 2013; 10-15).

3.8 Existing on-line technologies in Teaching and Learning

Naik et al., Dehbi, Talea and Tragha, (2013) present technologies in cloud computing as dynamic tools of collaboration in e-learning, as:

- Microsoft Live@edu providing free e-mail addresses to students.
- Microsoft Office Web Apps: enabling learners or an individual to save, edit and share documents on-line; being a smart way to share documents outside of class in making use of Microsoft Office 2010; PowerPoint, word, excel and one note. Sharing of work, data and assignments may be done through SkyDrive and office 360.
- Google Apps: enhances collaboration through use of Google word processor, forms, PowerPoint, spread sheets. Google Apps is accessed through Google drive into Google docs.
- Dropbox: may be used for syncing and storage of data 5 GB (Gigabytes) upwards.
- ADrive: developed by aDrive, may be used for storage of data with a capacity as far as 50 GB.

- Box.net: uses a box with 5 GB for storage.
- You tube: for hosting videos.
- Google, Picasa: for hosting images.
- Yahoo, Flickr: for hosting images.

3.9 TAM and e-learning

The Technology Acceptance Model has been widely used as a model of understanding how users accept Information Systems (IS) technology; with major focus being on students in educational systems (Lee, Hsieh and Hsu, 2011:1). Although TAM may be used in predicting end users acceptance of a digital or technological system, it does not sufficiently reflect end users acceptance of the system in an institution (Lee et al., 2011:2). Lee et al. (2011) further states that TAM is seen as an excellent model to explicate the acceptance of Information Technology. However, doubtful or questionable it stands that it may be used or applied to analyse every example or occurrence of adoption and implementation of an Information System or Information Technology. It is recommended to integrate other technology models besides TAM.

3.10 Innovation Diffusion Theory (IDT)

Lee et al. (2011) explains diffusion as “*the process by which an innovation is communicated through certain channels over time among members of a social system*”. The IDT theory, arguably states that the potential users to the system may adopt or reject an innovation on the premise of beliefs that may form about the innovation.

Innovation Diffusion Theory (IDT) and Technology Acceptance Model (TAM) share common constructs (Lee et al., 2011:3), that of:

- Relative advantage; the level to which an innovation may be considered to be better than the previous idea.
- Compatibility; the innovation seen to be consistent with end users values and experiences.
- Complexity; perceived as the level of difficulty or ease of use of innovation by end users.
- Trialability; the extent to which an innovation may be tested on a limited scale.
- Observability; the level or degree to which an innovation can be seen or may be visible to other people.

3.11 Five-stage Model Approach in Teaching and Learning

South African Institute of Distance Education (2013) cites Salmon's five stage model of on-line interaction that learners go through in digital learning, as:

- **Access and motivation**

Access and motivation is a welcoming and encouraging stage of an established or set-up e-learning system. Students need information and the support to go on-line. Learners need the encouragement and support to get started with the on-line system which may be daunting to start with. It is paramount to clarify to learners about accessing content on-line, and how they may use it within their time.

- **On-line socialisation**

Learners may be reluctant to contribute to discussion forums, or in responding to e-tutors remarks or comments. On-line tutors should help learners with similar interests get into contact with each other, diffuse any possible conflicts and promote an environment of mutual understanding. This stage of socialisation on-line, involves the sending and receiving of messages, familiarisation and building of bridges between the social, cultural and learning spheres.

- **Information exchange**

The exchange of information facilitates tasks and supports use of learning content. It involves searching and personalisation of software. The flow of e-learning content makes participants get excited with the immediacy of access to the e-learning system.

There is interaction with the programme content and with students, administrative staff and e-tutors. The information stage may present a potential information overload. The student support team or e-tutors should help learners develop time management and organisational skills and guide learners in free flowing of communication amidst vast amounts of information available.

- **Knowledge Construction**

This stage is a facilitating or conferencing stage. On-line facilitators or e-tutors have the responsibility to build and keep the groups amidst participants' interactions or active explorations, in student construction of knowledge and skills. Development of ideas is encouraged in making learners on-line authors other than transmitters of information.

- **Development**

In the development stage there are activities like; responding, providing links outside lecture facilitation. Students explore their thinking and processes that help build knowledge. This is a higher level requiring the ability to reflect on, and explicate own learning experiences.

3.12 E-Portfolio Model

Lecturers and students in higher education environments make use of e-portfolio model in showcasing their own work. E-Portfolio model is described as “*a digital device that stores visual, auditory content (including text, images, videos and sound) to demonstrate competences and reflections in a field of knowledge to a lecturer, a colleague, a professional, or a community*”. Higher education institutions place their focus on e-portfolio characterising; communication, connections, storage and development. E-Portfolio show cases learners and lecturers abilities in the areas of; communications, hypermedia and multimedia. Furthermore, the ease of access and storage to e-portfolios encourages students and lecturers demonstrate learning that has taken place over time. The e-portfolio acts as a repository for students and lecturers in uploading e-content in the applications regarding processes, assessments and reflections (Huang, Yang, Chiang and Tzeng 2012: 16-21; Deckson and Suresh, 2010: 4175-4181).

The E-Portfolio model assists lecturers and students in building their thinking capabilities from the available processes in reflections and assessments (Huang et al., 2012).

3.13 TPACK Model

The area of Teaching and Learning is complicated in that it requires the integration of technology in the lecture rooms. Reflection is one tool that helps lecturers develop “*Technological Pedagogical Content Knowledge*” (TPACK), the complex and dynamic knowledge required for integrating technology and instruction in the lecture rooms (Lu, 2013: 13-35).

In this digital or electronic era, Teaching and Learning in education calls for the integration of information and communication and this has presented a complex situation in presentation of instruction to technology integration regarding TPACK. Scholars have shared the use of reflection in facilitating lecturers or instructors’ knowledge development in the use of technology (Lu, 2013). Little is known as to whether or how reflections may fast track knowledge development in Teaching and Learning. Reflection is viewed as a helpful tool in interpreting the technology experience that fosters TPACK in Teaching and Learning.

Interpretation of TPACK construction in reflections (Lu, 2013) is as follows:

Preparatory Reflection spheres;

- Technological Knowledge (TK) around new and advanced technology.
- Pedagogical Knowledge (PK) for educational purposes.
- Content Knowledge (CK) pertaining to the actual subject.
- Technological Pedagogical Knowledge (TPK); knowledge that is in different Teaching and Learning settings.
- Technological Content Knowledge (TCK); knowledge about how technology may change the subject matter.
- Pedagogical Content Knowledge (PCK); knowledge of how teaching approaches fit the content and its elements to better understanding of the subject.
- Technological Pedagogical Content Knowledge (TPACK); knowledge that presents concepts using technologies, pedagogical techniques and knowledge construction in furthering knowledge development.

5- Findings from the literature review

Dzakiria, Kasim, Mohamed, Christopher and Utara (2013:112), highlight some limitations to effectiveness of e-learning on-line open sources, which are a lack of computers or cell phones with Internet connectivity for users of e-learning system. Another important aspect in the effectiveness of e-learning is that the quality of e-learning programmes may be influenced by factors such as interaction levels defined by interactions student to student, student to instructor, and student to learning program (Dzakiria, Don, and Abdul Rahman, 2012).

. Findings on the benefits of using e-learning system

According to Rao (2010:114) the following are the benefits of e-learning compared to paper based learning methods:

- Cost savings; the cost of developing, distributing, and maintaining an e-learning application is often much less than the cost of an instructor-led training program.
- Getting the most out of budgets adding valuable tools and techniques; ability to update any topic in published content and delivers its results instantly over the internet or intranet.

6 -Lesson learned

From what transpired, all the material can be up to date without the expense of reprinting a book, storing inventory, or manually distributing an update. Also, in an online course, an unlimited number of colourful graphics and special effects can be delivered that direct attention to the important points in the learning material. Students can interact with new material right away, by answering practical questions and directing their own learning pace. When one includes questions in a course, student answers can be automatically tracked with a learning management system.

7- Conclusion and recommendations

Computers and Internet have become part of an integral part in higher education. Institutions of higher learning can no longer ignore e-learning. The choice of a type of e-learning system approach, calls for the know-how and know-why of the selected approach for effectiveness. Internet access has become a given tool. Competition amongst learning institutions will be on the quality of learning experience comprising quality on-line learning programmes supported by on-line information, administrative, and technical support services.

More so it is important to achieve stability in the login or access to the institutions e-learning system, allow users access the system as a stable website through Home page rather than relying on links to the website as links seem to be broken or can be moved at any time.

To configure student access to the e-learning system the first time around student registration in such a manner that the student can have access to content throughout the duration of study provided that he or she meets set minimum course fee requirements.

Users should be encouraged to manage their time efficiently when it comes to the use of computers and other technological resources around the e-learning environment. Students who wait to accomplish their assigned tasks on the last minute face queues which may indicate that computers in the cyber centres are not enough of which it is not so, just being a lack of time management on their part. On the other hand, institution's management team is encouraged to put up more Wi-Fi rooms motivating e-learning system users access e-learning. There should be on-going training on how users are accessing e-learning with various technological tools linked to the current e-learning system in place.

Students need instructors or lecturers, academic doctors and professors to learn besides technology. Technology alone is not the answer to learning

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