A SURVEY OF E-LEARNING READINESS IN TERTIARY INSTITUTIONS: A CASE STUDY OF KENYA POLYTECHNIC

BY

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DECLARATION

I declare that this project is my original work and has never been presented for academic purposes in any other university/institute.

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DEDICATION

I dedicate this project to

My children; Charlene, Makena

and to my husband Peter

ACKNOWLEDGEMENT

ABSTRACT

This was a case study to determine the readiness factors for E-Learning at Kenya Polytechnic, Nairobi. E-learning is an alternative that institutions in Kenya cannot ignore any longer. Therefore there is thus a need to assess the readiness of these institutions to implement E-learning. To be able to provide E-learning in any institution, an e-readiness assessment survey needs to be carried out.

The objective of this study was to establish the key factors that determine the readiness for E-learning in Kenya polytechnic

The study data analysis was done using descriptive statistics, frequencies, and factor analysis. Factor analysis was done to determine the readiness factors necessary for E-learning

This study concluded that in comparing the traditional method of learning with E-Learning the students indicated that there are so many disadvantages that the traditional class room learning method face. For example, the learner must be given time to participate in an e-learning course, must have easy access to a computer, must see learning as a personal advantage and for career development and must be able to take responsibility for much of his or her own learning. Factors that contribute to readiness for E-learning included the following : - the learner computer literacy, the learners' character, and the learner's motivation. Organization should provide e-learning management support and e-learning culture. The content for E-learning should include E-learning mechanisms and the e-learning delivery methodology. The technical requirements should include technical support. Thus the future of e-learning must be considered.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER ONE

INTRODUCTION

1.1 Background

With the specter of the growing digital divide looming large, many private and public institutions are harnessing the power of information and communications technology (ICT) for development with perceived hope of improving efficiency and effectiveness in education delivery. There are various modes of education delivery available to institutions today as a result of advances in ICT. One of the fundamental aspects of modes of delivery that has been fundamentally transformed due to technological advances is distance education.

Distance education, the precursor to online education or e-learning has had a long history, extending back to the nineteenth century (Moore and Kearsley, 1996; Patterson, 1996; Cannell, 1999). The development of an extensive, relatively inexpensive postal service in the late nineteenth century led to the creation of print-based correspondence courses. Such courses allowed for the distribution of information and the sustained exchange between learner and instructor via print.

With the development of telecommunications, distance education was given new opportunities. From the early twentieth century, radio broadcasts allowed for the widespread distribution of aural course delivery. This was soon joined with the televised broadcasts of both visual and aural delivery of material. Voice recording abilities allowed for the distribution of audio lectures with print-based material. Today the development of electronic communication media has opened further possibilities.

While correspondence courses and radio and TV broadcasts are still in use, new technology has broadened such delivery mechanisms. Two-way audio-visual equipment allows for simultaneous interaction among a number of physically separated locations. Computers, and particularly the Internet and the World Wide Web, have opened up a world of learning at a relatively inexpensive delivery cost. This new mode of delivery is e-learning. Many institutions are now looking to computer-mediated delivery of educational

courses either as a supplement to face-to-face classes or as a means to deliver entire courses and, sometimes, the entire curriculum. This being said, the delivery of online courses is in its infancy especially in Kenya and, despite much discussion and debate in other parts of the world, there is room for much more research around theory and case studies. Nevertheless, many institutions in Kenya are beginning to recognize the opportunity inherent in e-learning as many institutions worldwide are confronting difficult factors such as higher student costs, reduced government funding and increased diversity of the student body. Basing their opinions on these issues and others, several authors (Burke, 1994; Doucette, 1994; Guskin, 1994; Phelps; 1994) suggested the need to restructure fundamentally the teaching and learning process through the integration of information technologies.

Doucette(1994) reinforced this view:

> "The classroom economic model for higher education is becoming unsustainable, with decreasing state support the rule and increasing user fees beginning to strain the ability of individuals to afford the investment in college. Add to these the threat of serious private competition for educational programming, and it becomes clear that higher education must take seriously the challenge to reinvent a more effective productive model. Most argue that the key to such a model probably lies in improvement made possible by the application of information technology."

Others such as (Doucette, 1994) also argue further to state that the benefit is not only to the individual student and the institutions as a whole but also to the faculty. He believed that, although faculty will still have control over the course design, content, and assessment methods, control of the delivery mechanism must be shifted toward the students, empowering them to choose the way they acquire information and the way they learn.

In terms of faculty productivity, some experts argue that faculty workloads must be restructured to obtain higher productivity levels. For instance, Guskin (1994) believed that "faculty can effectively and efficiently use new technologies in away that will enhance and/or often substitute for a good deal of their present teaching method, thereby freeing

them to spend more time with students and have a greater impact on the learning of all these students"

Pina and Savenye (1992) suggested that the new faculty role would include the following skills:

1) Knowledge of several delivery systems,
2) Ability to develop interactive learning environments,
3) Ability to design courseware using authoring systems,
4) Knowledge of computers in different application areas and
5) Ability to organize, control and evaluate student centered learning.

Institutions in Kenya, just like others worldwide, therefore need to take advantage offered by ICT to remain competitive. Findlen (1994) believed that complex social organizations that do not evolve and adapt to changing societal expectations would not survive. Tertiary institutions in Kenya are no exception.

With the introduction of information and communication technologies (ICTs) learning in future in such institutions may not necessarily be centralized. Instead of students' having to travel to institutions for learning, it can be done at the touch of a key away from the institution. This could be achieved through e-learning. In the United States for example According to a survey by The Chronicle of Higher Education, 60 per cent of US colleges and universities offered online courses in 2000, an additional 8 per cent plan on starting such programs in the next 12 months, and 92 per cent plan on expanding their online learning programs in the next year. A total of 97 per cent of college students today use the Internet for research, and 70 per cent use the Internet daily (Hamm, 2000).

Another study conducted by Yen et al. (2001) showed there is an increasing focus on networking and Web development tools in MIS curricula throughout colleges of business in the US . ''In the US last year, the government spent $800 billion on education. Part of this sum was spent on a Government initiative to install electronic links in schools (known as the E-Rate). E-Rate is to ensure that 95 per cent of all state schools, and 63 per cent of all the classrooms in them, will have Internet access.'' Thus implementing e- learning in any institution is the way forward in attaining a   competitive edge

Kenya Polytechnic for example is a tertiary institution offering technical education, and for it to meet the changing needs brought about by the new technologies, the polytechnic needs to improve the institutions' e-readiness -- *the ability for a region to benefit from information and communications technology* in the face of these challenges.

Kenya Polytechnic is a national tertiary institution located on Haille Selassie Avenue in Nairobi Kenya that offers technical education. It was established in 1961 and offers training programmes on both full and part time basis to certificate, Diploma and higher diploma levels approaching degree standard. It is managed by board of governor through a chief Principal. The current student population is approximately 4,600 for regular course and about 5,500 students as part-time, but the figure varies from term to term.

The staff establishment stands at 450 non-teaching staff and 342 teaching staff but currently the institution has 391 non-teaching staff and 307 teaching staff in post. Kenya Polytechnic has 11 teaching departments headed by heads of departments, a computer centre, a staff development unit and enterprise development centre that services all departments in entrepreneurial education.

The administration of Kenya Polytechnic is through a computerized management information system (POLYMIS), which was established in 1991. Through POLYMIS, students' registration records can be accessed from a dump terminal in all the Head of Departments (H.O.Ds) offices. Kenya Polytechnic has a leased line from Jambonet through which seven departments can access Internet using at least one Computer, but plans are underway to ensure that every department has at least one computer connected to the Internet. Access to the Internet is still limited to the staff of Kenya Polytechnic. The institution is currently developing a website assisted by the Belgium government through the Polytechnic Computer Assisted Software Engineering (POLYCASE) which will enhance administration and market the institution. Over the years the technical training at Kenya polytechnic will be able the job market requirement for its demand for skills and training that are constantly changing and evolving. To help meet these changes Kenya Polytechnic needs to offer extensive continuing education to meet the need. Therefore

Kenya Polytechnic is faced with challenges of offering a totally different approach in teaching as demands market. This could be achieved through online access.

The polytechnic is currently linked with some local universities to provide an upward mobility for the graduates. Such institutions are Moi and Kenyatta Universities.

In this research project the researcher wishes to assess the e-readiness of Kenya Polytechnic for e-learning.

1.2 Statement of the problem

According to Hicks (2000), organizations can save up to 70 per cent of their training budget when instituting e-learning courses. In addition, e-learning personalizes the learning experience and allows for greater flexibility. Employees interested in continuing education while employed can take courses around their schedules and at their own pace while maintaining a consistency of material with their fellow workers. Through online education, institutions such as Kenya Polytechnic increase the likelihood of getting education to students wherever they live or work. Perhaps the greatest argument for e-learning are the findings comparing e-learning to more formal training programs. The findings show e-learning produces greater retention of material. According to Webster's (2001) study, e-learning students have 60 per cent faster learning curves compared to classroom counterparts.

In addition, technological advances in the last few years as indicated earlier have been responsible for major changes in the organizational structure of organizations, educational institutions included. The ability to access information has become the standard by which institutions of higher education are evaluated. Consequently, learning institutions are beginning to switch from the long-standing, teacher-centred learning paradigm toward a student-centered, technology based learning paradigm (Branson, 1990).

Therefore, e-learning is an alternative that institutions in Kenya cannot ignore any longer. There was thus need to assess the readiness of these institutions to implement e-learning.

There does not seem to be much information on the extent of e-learning in tertiary institutions in Kenya. The institution of higher learning over the years have used lecture method and other institutionalized teaching methods but have not explored the modern technique brought a bout by Information Technology.

To be able to provide e-learning in any institution, an e-readiness assessment survey needs to be carried out. This study aimed at establishing the key factors that determine the readiness for e-learning in Kenya polytechnic.

However since e-learning is a relatively new approach to Distance learning, the research also wished to establish factors behind efficient e-learning and also create awareness of the opportunities and challenges of joining the networked world. Linda Harasim(1995)has correctly stated ``all education face to face, distance mode, online mode, requires understanding the nature of the medium in order to conceptualize and design it as an educational environment''.

1.3 Objectives of the study were:-
1. To investigate e-learning readiness factors in Kenya Polytechnic
2. To determine the competencies required for e-learning operating environment

1.4 Importance of the study
In future, Kenya Polytechnic could conduct learning online which means students may cut down the cost of commuting to college and accommodation. The enrollment will significantly increase since there are some students who are working but do not find time to attend class in institutions and would therefore use website.

The obvious importance is that the lectures will not have to physically appear in the lecture theaters but can pass there learning material online thus giving quality time for research of more useful information to the students.

Myers 1991 assessment points out that though we have the potential to furnish the feedback required to enhance the quality and productivity of the IT functions" Thus such assessment is therefore vital for e-learning implementation.

The study will also generate interest in Kenya Polytechnic staff and management leading to their participation in implementing e-learning in the institution.

CHAPTER TWO

LITERATURE REVIEW

2.1 What is e-readiness?

According to Harvard e-readiness report, e-readiness is the level to which community is prepared to participate in the networked world. It can also be defined as an assessment of certain organizational or individual factors that should be considered if an institution (organization) is likely to be successful with the introduction of an e-learning strategy. This assessment is part of the organizations initial needs analysis which is defined by Desmone and Harry's (1998) as "a process used to better understand the characteristics of the organization to determine where training and human research development efforts are needed and the condition within which they will be conducted". For an institution to be e-ready the existence of the following parameters is paramount.

1) Availability of telephone lines
2) Availability of computers
3) Access to computers
4) Computer in labs
5) Local area network (LAN)
6) Access to email and Internet
7) Web servers
8) Wide area network (WAN)

2.2 Definition of e-learning

E-learning is just a term used to group together a few popular concepts such as distance learning, open learning, online learning, computer based learning (CBT) and web based learning (Inglis, 1999). The simplest explanation the "e" in the e-learning as something that is electronically delivered (Harasim et al, 1995).

Anderson (2000) further argues that most people understand "e" modified words as Internet enabled interaction between people.

From the above definitions the most critical consideration for e-learning is Internet based networked and focuses on a much broader views of learning and knowledge delivery than traditional training and learning methods.

E-learning solutions according to Rosenberg (2000) has at least one of the following criteria

1) It is the delivery of a broad array of solutions that enhance learning and facilitate quick and effective dissemination of knowledge and information.

2) It must be inter- and / or intranet based allowing people to access the same material from different places at the same (synchronous) and / or different asynchronous time.

3) It focuses on a broader view of learning, where learners have more responsibility for their own learning efforts.

Having defined what e-learning and e-readiness the study wishes to differentiate e-learning from the "traditional" training methods such as classroom training and also looks at e-learning strategy as a competitive edge due to the following advantages

2.2.1 Advantages of e-learning

1) Availability and flexibility: E-learning is available 24/7: 365 days a year. It is a just in time approach to training and learning that facilitators flexibility and enables the learners to participate in an e-learning program from home, work or anywhere else as long as they have access to a computer and a network (Hetzellah 1999)

2) Cost efficiency: E-learners can cut learners costs such as accommodation and travel expenses, as well as organizational costs such as classroom hire instructor hire and other material cost. Martin (1999) argues that 70 percent of a company's training costs are tied up in getting people to classes (transportation, meals, lodging instructors) and e-learning has the power to reduce or even eliminate these costs.

3) Speed and content: Because content is electronically delivered it can be easier and faster to modify and update them if the material is delivered in other ways. As often as is the case of traditional classroom settings. This means that in

situations where the primary objective is the rapid efficient dissemination of knowledge and where e-learning can be a successful alternative. (Urdan and Weggen 2000).

4) Trainer involvement and more appealing: since e-learning is Internet based the training and learning is more appealing to the learner due to the use of graphics. E-learning is also seen to facilitate involvement cooperation and learning since the learner must communicate to the instructor for any learning to take place.

5) Immediate feedback: Through the use of e-learning technologies the learners feedback is immediate and the leaner also use lesser training period depending on the speed of the learner

However e-learning does not provide a suitable delivery method in all cases. For example medical instructions where practical training need to be given technology may not offer a good solution.

2.2.2 Disadvantage of e-learning

1) It is costly to implement
2) It is not easy to learn

2.3 E-learning readiness factors:

Various writers in this topic have tried to provide an overview of factors that determine an organizations readiness for e-learning; and what questions managers and persons responsible for an organization training effort should ask themselves before embarking on e-learning project.

E-learning solutions as described above is a training and learning method delivered through a computer over a network. For an institution like Kenya polytechnic to adopt the new technologies some e-readiness factors need to be considered thoroughly beforehand. In his research (Peter Engholm, Monash University Australia, November 2001) identified the following as the most important determinant of e-learning readiness.

1) Organizational culture

2) Facilitator and individual learner

3) The technology

4) Content

5) Policy.

2.3.1 The organizational culture

An organizational structure can be defined as "a system of shared meaning held by members that distinguishes the organization from other organization" (Robbins et al, 2000).

The culture of any given organization that intent to engage in e-learning must have a shared view of the benefits of training and learning, This way the employee would be encouraged to learn, provided opportunities and time to learn and support from the management. This is because an organization has multidisciplinary professionals who must be willing to work as a team for success of e-learning. Therefore a logical starting point for e-learning readiness would be to Asses the readiness of an organization by identifying goals need, motivators, resource and constrains (Adrian and Ross, 2000). This makes the culture of any given organization a very important determinant for e-learning readiness, since the organization must be willing to ask itself whether learning is supported and encouraged whether learners are given time and opportunities to learn whether employees and managers in general have a positive attitude towards training and learning and whether e-learning is supported by top management and linked to broader organizational goals.

2.3.2 Instructor / facilitators

In an e-learning environment the instructor and trainers all move to an online environment where communities of learners work together to build and share knowledge. To be effective an online instructor should be equipped with different information as compared to the traditional classroom knowledge. To be effective an online instructor depending upon the material being instructed should have a moderate level of competence in

1) Using windows

2) Use of computer keyboard

14

3) Use of word processor and spreadsheet

4) Information search and retrieval from the Internet

5) E-mail

6) Database use

7) Video and audio conferencing (Salmon-2000)

The online instructor will also need to exits in a virtual environment where the senses of sight hearing taste smell and touch are non-existence in traditional terms.

2.3.3 The individual leaner

For any individual to learn, he/she must be motivated. The importance of motivation for successful training and learning has been stressed my many scales and e-learning its not any exception. A study by Blues, Abram and Amundser (2000) revealed that motivational preparation of learners' posses' low confidence and or skill levels. Motivation becomes a critical factor for e-learning since a student has to get in front of a computer for learning to take place.

Also before moving to an online environment it is important to be aware of the learners concerns and issues that are typical to this mode of delivery. For example a learner should have a basic knowledge of the following

1) Use of windows operating system

2) Use basic word processing and spreadsheet

3) Use of Internet search

4) Use of online libraries and reference material

5) Determine the credibility of a referenced website

The learner also need technical expert support and course instructors that should give feedback to ensure that the student are on course and are maximizing their learning.

In addition the learner should also be aware that the online environment can be lonely and according to the university of Illinois the following learner qualities will encourage success in the online environment. A learner should: -

1) Be open minded about sharing life, work, and education experiences as part of the learning process.

2) Be able to communicate through writing

3) Be self motivated and be self disciplined

4) Be willing to "speak up" if the a problem arise

5) Be willing and able to commit 4 to 15 hour per week per course.

6) Accept critical thinking and decision making as part of the learning process

7) Feel that high quality learning can take place without going to a traditional classroom.

2.3.4 Technology

Because e-learning by definition is based on a computer and inter - and /or intranet, one important determinant of e-learning readiness is that of technology. If the benefits of e-learning are to be attained, employees must have easy and fast access to the network where the e-learning material is hosted. This means that computers should be available to learners and the hosting network being capable of providing the content at a speed security level and reliability that is deemed necessary for the organizations planned e-learning strategy (Bates,1999)

Information and Communication Technologies (ICT) enhances e-learning and therefore those technologies like

1) Network access
2) Internet availability
3) Fixed line / leased lines
4) Wireless
5) Satellite
6) Communication software (Hardware)

Must be available for online environment to exist.

2.3.4.1 Network Access

(Final Report of the "Kenya ICT Infrastructure and E-Readiness Assessment Consultancy by Netcom Information Systems Ltd. Oct. 2002, Ministry of Finance and Planning)

Network access concerns the availability cost and quality of equipment. The institution wishes to engage itself in an online learning must first assess the readiness on

1) A good access to the communication network
2) A dial-up access through an Internet service provider
3) Leased lines
4) Reasonable rates on local calls
5) Some off the shelf hardware and software solutions are available

This e-learning readiness can be accessed through the technologies above and the modernization of these technologies makes e-learning very practical.

If these technologies do not exist (or cannot be developed) including a supporting IT departments that can quickly fix problems and assist users if things go wrong. E-learning is bound to be a short lived phenomenon in such institution. As a conclusion an organization technology readiness include making sure that content is easily accessible to learners, that speed and reliability issues with the intra and (on internet) will not hamper the learning process that IT support exist for helping learners and solving technological problems and that security issues are resolved to protect the institution information and content.

2.3.5 Content

Sometimes it is difficult to transfer certain training content to the Internet or Intranet e.g. work processes that require certain physical skills may not be practical or feasible to teach over a computer. Therefore traditional classroom may sometimes be the only mode of transmission of knowledge in cases where the work involves some vulnerable and dangerous actions. Whether e-learning is an appropriate training solution for learning content should be considered in the organizations readiness assessment. In his book e-learning : strategies for delivering knowledge in the digital edge Rosenberg(2000)

indicates that there are four key business measures that should be applied to cooperate e-learning. Namely

1) Cost - What does it cost to acquire or develop e-learning content? What is the Human resource training?

2) Quality - What is the quality of the learning programs? Is the learning improving employee performance?

3) Service - E-learning must meet the learners' needs as they change. Does the e-learning respond to customers needs?

4) Speed - How fast can e-learning respond to changes in the business? How can learning be effective scalable and responsive at "Internet speed"?

Therefore what learning material is to be taught, whether it is feasible to be taught over the computer and whether it can be brought or must be created, e-learning readiness in terms of content is a strong determinant.

2.3.6 Industry factors

It has been argued that e-learning can become a competitive advantage particularly to organizations that compete in a dynamic business environment where information must be quickly created, processed and disseminated throughout the organization (Koprowski, 2000).

An institution should have a clear reason for adopting e-learning strategies. Questions to be assessed may be whether there is need for quick updating of content, whether e-learning is a solution to retaining and attracting skilled employees or whether competition requires new approaches to training and development. These are all aimed as having a competitive advantage over the rivals.

One of the aims of Kenya Polytechnic is to train the students with average grade so it has to enable them to participate in National development. Other institution of higher learning including universities have started enrollment of similar average graded students and are offering them certificate courses.

2.3.7 Network policies:

(Final Report of the "Kenya ICT Infrastructure and E-Readiness Assessment Consultancy by Netcom Information Systems Ltd. Oct. 2002, Ministry of Finance and Planning)

Network policy concerns the extent to which the policy environment promotes or hinders the growth of ICT adoption and use. For example in Kenya the monopoly over Telkom over the provisions of fixed lines services, trunk lines, Internet gateway and Vsat has a negative implication on the implementation of e-learning. Limited technical capacity of regulators in key areas, especially interconnection agreement, Internet telephony and the management may solve as hindrance to the growth of e-learning in Kenya.

Also ICT policies in Kenya are not fully developed today and issues on telecommunication, regulations and policies have yet to be developed. Legislation for example in Kenya the following fields is not addressed.

- E-signature
- E-commerce
- Anti - e-fraud
- The personal protection towards personal data, usage and access.

The personal data processing and the private life protection in the telecom field. All these issues needs attending in a e-learning environment

2.4 Summary

From the literature Six core factors of e-learning readiness have been identified i.e. organization culture, the facilitator, individual learner, technology content, industry and IT policies. Within each of these factors there are several determinants of e-learning readiness.

The aim of the study was to assess how organizations in practice can determine their e-learning readiness and thus various determinants of e-readiness was discussed in this chapter laid the groundwork for the data collection strategy explained in the next chapter.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

The research design is a case study. This is due to the exploratory nature of the study and lack of empirical evidence in the area of study; an inductive and qualitative research design was embraced. Kaplan and Maxwell 1994 argues that the logic of choosing qualitative research as opposed to quantitative is that the goal of understanding a phenomenon from the point of view of the participants and in particular social and institutional context is largely lost when textual data are quantified. Qualitative designs are also particularly suited for research in an under explored field of study and because the aim of this study is not to test a previous theory but to focus on understanding and explaining what cultural social and contextual elements within organization can determine their readiness for e-learning.

3.2 Population

The research project targeted all the polytechnic staff and student. The student population was approximately 4,600 for regular course and about 5,500 students as part-time, but the figure varies from term to term.

The staff establishment stands at 450 non-teaching staff and 342 teaching staff but currently the institution has 391 non-teaching staff and 307 teaching staff in post

3.3 Sampling method

The research used stratified random sampling. In each stratum, the population was divided into the 11 departments that constitute the Kenya Polytechnic establishment. From each department simple random sample of 30 was then chosen using systematic random sampling in the case of students, lecturers and the administration staff.

3.4 Data Collection Technique

This study used primary data collected by use of a questionnaire. The questionnaires constituted many of close-ended questions and few open ended question where the

respondents gave a personal opinion to what determines an organization readiness for e-learning. The questionnaire used in obtaining data consisted of 3 sections (see appendix). Section A has questions that sought information on the existing I.T. Usage. Section B sought information on the e-readiness factors and section C was used to gather information on e-learning as a means of knowledge acquisition.

The drop and pick method was used to collect the data since the population was within one location

3.5 Data Analysis Techniques and Presentation

The data collected was coded into a data matrix and analyzed by the use of factor analysis so as to uncover the underlying factors for e-learning readiness. "To ensure that the dimensions are un-correlated and thus disturb the principal component solution was orthogonaly rotated using the Varimax rotational method. Frequency tables percentages and averages were used in data analysis.

The research used the SPSS computer software package and the results of the analysis were presented in tables and charts that showed relationships.

CHAPTER FOUR

DATA ANALYSIS FINDINGS AND DISCUSSION

4.1 Students Readiness for E-Learning

FIGURE 1: BAR GRAPH LEVEL OF STUDY
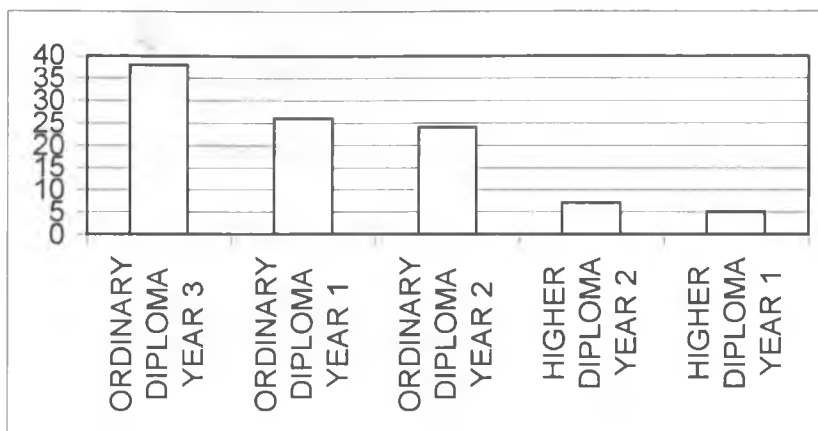
From the chart above, 38% of the respondents are students in ordinary diploma third year. 26% are in the first year and 24% are in the second year. 7% of the respondents are in higher diploma 2nd year and 5% are in higher diploma first year.

FIGURE 2: PIE CHART: PLACES OF COMPUTER ACCESS
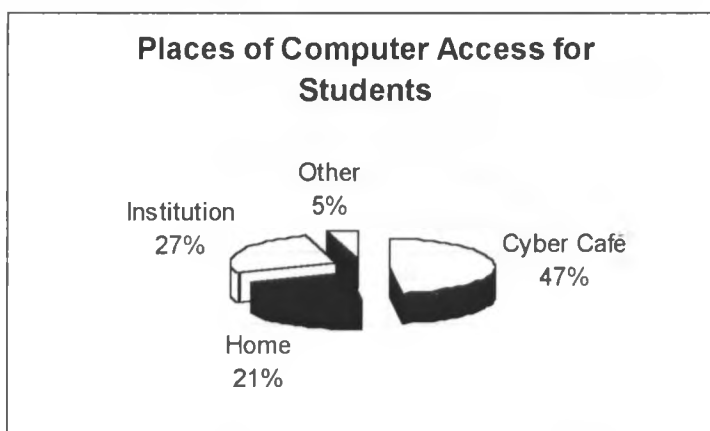
60% of the students access a computer in a cyber café, 26% at home, 33.75 at the institution, and 6% in other places. This implies that the institution needs to increase its infrastructure capacity.

TABLE 4.1: FREQUENCY OF STUDENT'S USE OF COMPUTER.

How Often Do You Use A Computer		
	Frequency	Valid Percent
Per Day	37	37
Per Week	51	51
Per Month	12	12
Total	100	100

51% of the respondents use a computer weekly, 37% use the computer daily and 12% use

a computer once a month. This implies that most of the respondents once in a while uses

of computers and probably need to be made regular users.

TABLE 4.2: STUDENTS WITH E-MAIL ADDRESS

Do You Have An Email Address?		
	Frequency	Valid Percent
Yes	76	76
No	24	24
Total	100	100

76% of the respondents have an e-mail address. The others do not have e-mail addresses.

E-mail is the fastest way of exchanging documents and communicating. Therefore having

an e-mail implies that one is e-ready.

TABLE 4.3: WHETHER E-LEARNING WOULD CREATE COMPETITIVE EDGE AT KENYA
POLYTECHNIC

Do You Think E-Learning Would Create A Competitive Edge In Kenya Polytechnic		
	Frequency	Valid Percent
Yes	88	94.6
No	5	5.4
Total	93	100

94.6% of the respondents indicated that e-learning would create a competitive edge in

Kenya Polytechnic while only 5.4% indicated otherwise. This implies the way forward for

Kenya Polytechnic because it will make Kenya Polytechnic one of the few learning

institutions to implement e – learning and would reach out more to a wider market and thus reduce some fixed costs which leads to competitive advantage.

TABLE 4.4: E-LEARNING METHODOLOGY

Would E-Learning Offer Better Methodology?		
	Frequency	Valid Percent
Yes	92	98.9
No	1	1.1
Total	93	100

An overwhelming 98.9% of the respondents indicated that E-learning offers better methodology because it leads to higher student retention of learned material and the students are involved and interested in what they are doing. This implies that E-learning is mandatory in order to remain competitive.

TABLE 4.5: DISADVANTAGES OF THE TRADITIONAL CLASS ROOM LEARNING

Disadvantages Of Traditional Class Room Learning		
Disadvantage	Frequency	Percentage
Monotonous/Boring	32	20.1%
Tedious /Cumbersome	19	11.9%
Time Wasting	17	10.7%
Difficult To Formulated/Utilize Knowledge	13	8.2%
Research Is/Outdated	10	6.3%
Lack Of Facilities	8	5.0%

From Table 4.5 above, the respondents (students) indicated that there are many disadvantages that the traditional class room learning method face. The major ones listed above include that the method is: -

1) Monotonous and boring

2) Tedious and cumbersome

3) Time wasting

4) Difficult to formulate and disseminate the right knowledge

5) Research is outdated

6) Lack of facilities

The other disadvantages cited by the respondents include: - Unconvincing content, no concentration in class, expensive, congestion, bias between students& lecturers, students unable to specialize in one field, not interactive, do not participate fully, require extra research, show off lecturers, only one way traffic, no access to outside world, limited time, lack of flexibility, easy to forget, very dirty, undermined, poor teaching atmosphere, less practical, lack of motivation, excessive human resource, encourages immorality.

4.1.2 Determinants of readiness for E-learning - Students

TABLE 4.6: FACTORS THAT DETERMINE READINESS FOR E-LEARNING.

Descriptive Statistics - Students		
	Mean	Std. Deviation
The Learner Must Be Given Time To Participate In An E-learning Course	1.12	0.48
The Learner Must Have Easy Access To A Computer	1.15	0.56
The Learner Must Poses A Strong Level Of Motivation	1.32	0.76
The Learner Must Be Willing O Learn Via Computer	1.42	0.73
The Learner Must Be Highly Confident With The Use Of computers	1.44	0.80
The Learner Must Be Open Minded And Positive To New forms Of Training	1.51	0.94
The Learner Must Have Easy Access To Technical Staff	1.64	1.11
The Learner Must See Learning As A Personal Advantage and For Career Development	1.71	1.18
The Learner Must Be Able To Take Responsibility For much of Their Own Learning	1.73	1.26
The Learner Must Be Motivated To Learn	1.74	1.27
The Learner Must Have Sound Management Skills So That they Take Time Off For Participation	1.91	1.05
The Learner Must Be Somewhat Dissatisfied With Previous training Methods	3.34	1.67

From the above table a Likert scale of 1 – 5 where 1 meant strongly agreed and 5 meant strongly disagreed and 3 meant neutral measured the factors that determine the readiness for e-learning. By using the mean for each statement, it was found that lying at a scale of 1 – 3, the respondents agreed with majority of the statements except the statement that the

learner must be somewhat dissatisfied with previous training methods. Standard deviation shows how close the diversion from the statement between the respondents. From this it can be seen that the respondents strongly agreed with the following statements: -

1) The learner must be given time to participate in an e-learning course(1.12)

2) The learner must have easy access to a computer (1.15)

3) The learner must poses a strong level of motivation (1.32)

4) The learner must be willing o learn via computer (1.42)

5) The learner must be highly confident with the use of computers (1.44)

6) The learner must be open minded and positive to new forms of training (1.51)

The other statement with wide standard deviation means that the statements had a diverse view, which could range from agreed to disagree. These are: -

1) The learner must have easy access to technical staff (1.64)

2) The learner must see learning as a personal advantage and for career development (1.71)

3) The learner must be able to take responsibility for much of their own learning (1.73)

4) The learner must be motivated to learn (1.74)

5) The learner must have sound management skills so that they take time off for participation (1.91)

6) the learner must be somewhat dissatisfied with previous training methods (3.34)

4.1.3 Factor Analysis – Students Perspective

Using factor analysis to identify the factors that determine the success and the readiness for e- learning several factors were identified according to the students' responses.

TABLE 4.7: TOTAL VARIANCE EXPLAINED

Total Variance Explained - Students

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squa | | |
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumula e %
1	3.131	26.095	26.095	3.131	26.095	26.095	2.766	23.049	23.049
2	2.013	16.771	42.867	2.013	16.771	42.867	1.826	15.216	38.265
3	1.447	12.059	54.926	1.447	12.059	54.926	1.6	13.331	51.596
4	1.103	9.193	64.118	1.103	9.193	64.118	1.503	12.522	64.118
5	0.943	7.86	71.979						
6	0.872	7.266	79.244						
7	0.66	5.499	84.744						
8	0.51	4.247	88.991						
9	0.461	3.84	92.831						
10	0.413	3.443	96.274						
11	0.284	2.363	98.637						
12	0.164	1.363	100						

The identification factors using factor analysis was through a factor analysis process. To be able to pick the sufficient factors from several components, factor loadings in every component was determined using eigen values. The components with eigen values of 1 and above were picked. 64.11% is the total variance explained by the four factors extracted.

After the identification of the factors by Eigen values was made, these components and factors are rotated using Varimax to determine the maximum variables in each factor matrix. The result gives the factors and the components that comprise that factor. From these components of each factor were identified from the rotated component matrix table below.

Rotated Component Matrix - Students	Component			
	1	2	3	4
The Learner Must Have Easy Access To A Computer	0.892	9.45E-03	0.135	2.28E-02
The Learner Must Be Given Time To Participate In An E-Learning course	0.868	-8.85E-02	0.136	-8.26E-02
The Learner Must Be Highly Confident With The Use Of Computers	0.747	2.78E-03	0.272	-4.90E-02
The Learner Must Be Open Minded And Positive To New Forms Of training	0.651	0.298	-0.251	0.155
The Learner Must Have Easy Access To Technical Staff	-0.106	0.777	-1.66E-02	9.30E-02
The Learner Must Be Willing to Learn Via Computer	0.303	0.722	0.103	-0.271
The Learner Must Poses A Strong Level Of Motivation	-2.53E-02	0.656	0.173	0.278
The Learner Must Be Motivated To Learn	0.106	-5.24E-02	0.826	-6.42E-02
The Learner Must Be Able To Take Responsibility For Much Of Their Own Learning	0.15	0.168	0.623	0.115
The Learner Must Have Sound Management Skills So That They take Time Off For Participation	.86E-02	0.156	0.554	0.462
The Learner Must Be Somewhat Dissatisfied With Previous Training methods	-0.167	-9.03E-02	5.51E-02	0.823
The Learner Must See Learning As A Personal Advantage And For career Development	0.266	0.333	6.50E-02	0.634

From this table it can be seen that Factor 1 named The Learner Computer Literacy is comprised of the following components with the factor loadings : -

1) The learner must have easy access to a computer – 89.2%

2) The learner must be given time to participate in an e-learning course – 86.8%

3) The learner must be highly confident with the use of computers – 74.7%

4) The learner must be open minded and positive to new forms of training – 65.1%

Factor 2 named Technical Support is comprised of the following components: -

1) The learner must have easy access to technical staff – 77.7%

2) The learner must be willing o learn via computer- 72.2%

3) The learner must posses a strong level of motivation – 65.6%

Factor 3 named The Learners' Character is comprised of the following components: -

1) The learner must be motivated to learn – 82.6%

2) The learner must be able to take responsibility for much of their own learning – 62.3%

3) The learner must have sound management skills so that they take time off for participation – 55.4%

Factor 4 named The Learner's Motivation is comprised of the following components: -

1) The learner must be somewhat dissatisfied with previous training methods – 82.3%

2) The learner must see learning as a personal advantage and for career development – 63.4%

4.2 The Administration

4.2.1 Factors that determine readiness for E-learning

By using descriptive statistics, the findings for the survey on the factors that determine e-readiness for e-learning came up with the following results.

TABLE 4.9: FACTORS THAT DETERMINE READINESS FOR E-LEARNING - ADMINISTRATION

	Mean	Std. Deviation
E-Learning Content Must Be Up-To-Date And Relevant	1.27	0.47
Training Evaluation Methods Must Exist And Be Used	1.27	0.65
E-Learning Must View Learning As An Investment, Not A Cost	1.36	0.67
E-Learning Must Be Strongly Supported By Top Management	1.36	0.5
The E-Learning Content Must Be Appealing	1.45	0.52
E-Learning Strategy Must Be Closely Connected To Broader organizational Strategies And Goals	1.45	0.52
Learning Support Mechanisms, Such As Learning Management Systems, must Exist	1.45	0.52
The Values For E-Learning Must Be Communicated And Accepted Throughout The Organization	1.45	0.93

From the above table a likert scale of 1 – 5 where 1 meant strongly agreed and 5 meant strongly disagreed and 3 meant neutral measured the factors that determine the readiness for e learning. By using the mean for each statement, it was found that lying at a scale of 1 – 3, the respondents agreed with majority of the statements. Standard deviation shows how close the diversion from the statement between the respondents. From this it can be seen that the respondents strongly agreed with the following statements with their means:

1) E-learning content must be up-to-date and relevant – 1.27

2) Training evaluation methods must exist and be used – 1.27

3) E-learning must view learning as an investment, not a cost – 1.36

4) E-learning must be strongly supported by top management – 1.36

5) The e-learning content must be appealing – 1.45

6) E-learning strategy must be closely connected to broader organizational strategies and goals – 1.45

7) Learning support mechanisms, such as learning management systems, must exist – 1.45

8) The values for e-learning must be communicated and accepted throughout the organization – 1.45

TABLE 4.10: COMPUTERS IN THE LABORATORY.

How Many Computers Are In Your Lab		
	Frequency	Valid Percent
Between 0 - 10	2	18.2
Between 11- 20	6	54.5
Between 21-30	2	18.2
Above 30	1	9.1
Total	11	100

According to the administration there are at most 30 computers in there computer laboratory. The responses vary because of the use of the computers. 54.5% who indicated that there are between and 11 – 20 computers in their lab probably are the ones who use computers and frequently visit the lab. The other do not seem to have concrete idea as to how many computers there are maybe because they do not use the laboratory much.

TABLE 4.11: COMPUTER – STUDENT RATIO.

SIQB:WHAT IS COMPUTER STUDENT RATIO		
	Frequency	Valid Percent
01:01	1	11.1
01:02	1	11.1
01:03	5	55.6
OTHER	2	22.2
Total	9	100

According to the majority of the administration officials, the computer to student ratio is 1:3. Others indicated that there are times when the ratio is 1:1, 1:2 or other ratio depending on the usage and period of use. This implies lack of seriousness in the administration of the facilities.

FIGURE 3: PIE-CHART: STUDENTS ACCESS TO COMPUTER LAB PER WEEK
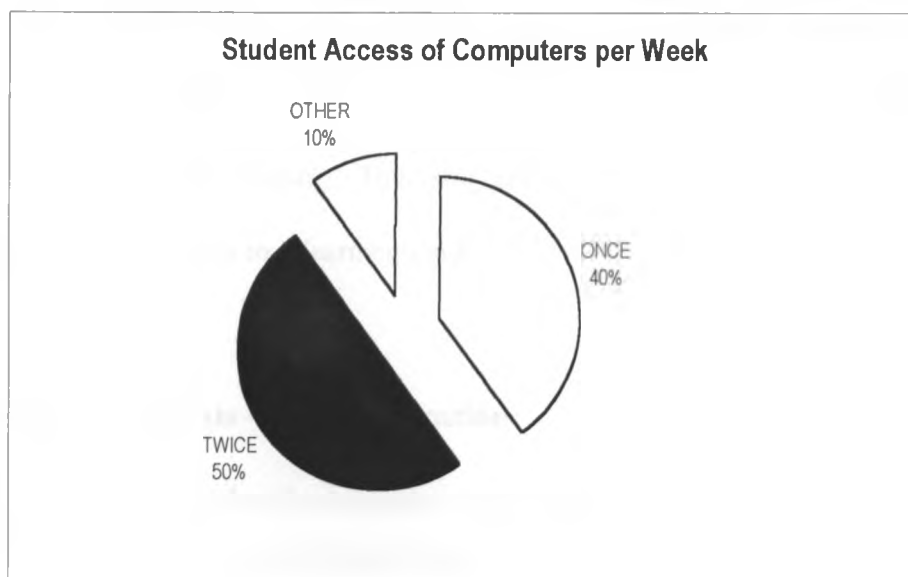
According to 50% of the administrators, students visit the computer lab twice per week. 40% of them indicated that students visit the lab once a week and 10% indicated that students visit the lab other unspecified number of times. There is inconsistency in the awareness of the infrastructure and the use.

TABLE 4.2.13: AVAILABILITY OF COMPUTERS IN OFFICES

DO YOU USE COMPUTERS IN YOUR OFFICE		
	Frequency	Valid Percent
YES	10	90.9
NO	1	9.1
Total	11	100

90.9% of the administrators have computers in their offices. All the administrators indicated that they have e-mail addresses. This shows that there can be an easy transformation to e-learning mode.

TABLE 4.2.14: E-LEARNING COMPETITIVE ADVANTAGE

DO YOU THINK E-LEARNING WOULD CREATE A COMPETITIVE EDGE IN KENYA		
	Frequency	Valid Percent
YES	10	90.9
NO	1	9.1
Total	11	100

90.9% of the administrators indicated that E-learning would create competitive edge for Kenya Polytechnic. All the administrators also indicated that E-learning would offer a better methodology for training. This still enforces the fact that there can be an enthusiastic transformation to e-learning mode.

4.2.2: Factor Analysis – Administration

Using factor analysis to identify the factors that determine the success and the readiness for e- learning several factors were identified according to the administrators' responses.

Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.849	31.656	31.656	2.85	31.656	31.656	2.58	28.69	28.69
2	2.303	25.584	57.241	2.3	25.584	57.241	2.33	25.886	54.576
3	1.553	17.256	74.496	1.55	17.256	74.496	1.79	19.921	74.496
4	0.94	10.444	84.941						
5	0.642	7.135	92.075						
6	0.492	5.469	97.544						
7	0.163	1.815	99.359						
8	4.07E-02	0.452	99.811						
9	1.70E-02	0.189	100						

To be able to pick the sufficient factors from several components, factor loadings in every component was determined using eigen values. The components with eigen values of 1 and above were picked. This can be seen from the table above. After the identification of the factors by Eigen values was made, these components and factors are rotated using Varimax to determine the maximum variables in each factor matrix. The result gives the factors and the components that comprise that factor. 74.496% of all the factors analyzed were extracted meaning that the extraction achieved a high percentage of representation. From these components of each factor were identified from the rotated component matrix table below.

TABLE 4.16: ROTATED FACTOR MATRIX

Rotated Component Matrix			
	Component		
	1	2	3
The Values For E-Learning Must Be Communicated And Accepted Throughout The Organization	0.912	-1.02E-02	-0.14
Training Evaluation Methods Must Exist And Be Used	0.908	-0.118	0.351
Learning Support Mechanisms, Such As Learning Management Systems, Must Exist	0.721	0.226	-0.23
Organizational, Technological, And Cultural E-Learning Readiness-The Network Connection Must Be Fast And Reliable Factors	9.77E-02	0.894	-0.31
E-Learning Must View Learning As An Investment, Not A Cost	-0.108	0.829	-0.25
E-Learning Content Must Be Up-To-Date And Relevant	8.25E-02	0.716	0.31
E-Learning Strategy Must Be Closely Connected To Broader Organizational Strategies And Goals	0.48	0.505	0.121
The E-Learning Content Must Be Appealing	0.21	-0.104	0.861
E-Learning Must Be Strongly Supported By Top Management	-0.322	-1.66E-02	0.769

From this table it can be seen that Factor 1 named The Learning Mechanisms is comprised of the following components: -

1) The values for e-learning must be communicated and accepted throughout the organization – 91.2%

2) Training evaluation methods must exist and be used – 90.8%

3) Learning support mechanisms, such as learning management systems, must exist – 72.1%

Factor 2 named E-Learning Culture is comprised of the following components: -

1) Organizational, technological, and cultural e-learning readiness- the network connection must be fast and reliable factors – 89.4%

2) E-learning must view learning as an investment, not a cost – 82.9%

3) E-learning content must be up-to-date and relevant – 71.6%

4) E-learning strategy must be closely connected to broader organizational strategies and goals – 50.5%

Factor 3 named E-Learning Management Support is comprised of the following components: -

1) The e-learning content must be appealing. – 86.1%

2) E-learning must be strongly supported by top management – 76.9%

4.3 Lecturers

TABLE 4.17: 4.3.1: DESCRIPTIVE STATISTICS – LECTURERS PERSPECTIVE

Descriptive Statistics – Lecturers		
	Mean	Std. Deviation
E-Learning As A Method Of Delivering Training Is Likely To Increase In The Future	1.32	0.75
Current And Future Potential Use Of E - Learning Readiness Factors-Most Organizations In The Future Will Be Using A Combination Of E-Learning Ad Other Training Methods	1.33	0.66
E-Learning Can Be More Appealing Training Delivery Method Due To Its Use Of Graphics And Multimedia	1.74	1.03
E-Learning Can Be Flexible Than Other Training Methods, Due To Its Potential To Be Accessed Anytime	1.78	0.99
In General, E-Learning Can Facilitate Participation, Involvement And Learning Better Than Other Training Methods	2.27	1.35
E-Learning Has The Potential To Be Less Costly Than Other Training Methods	2.39	1.34
E-Learning Will Eventually Replace All Other Training Methods	3.57	1.39

From the above table a likert scale of 1 – 5 where 1 meant strongly agreed and 5 meant strongly disagreed and 3 meant neutral measured the factors that determine the readiness for e learning. By using the mean for each statement, it was found that lying at a scale of 1 – 4, the respondents agreed with some statements and disagreed with others. Standard deviation shows how close the diversion from the statement between the respondents. From this it can be seen that the respondents strongly agreed with the following statements. The means are included.

35

1) E-learning as a method of delivering training is likely to increase in the future – 1.32

2) Most organizations in the future will be using a combination of e-learning ad other training methods – 1.33

The respondents agreed with the following statements: -

1) E-learning can be more appealing training delivery method due to its use of graphics and multimedia – 1.74

2) E-learning can be flexible than other training methods, due to its potential to be accessed anytime – 1.78

3) In general, e-learning can facilitate participation, involvement and learning better than other training methods – 2.27

The respondents were more or less neutral to the statement that, E-learning has the potential to be less costly than other training methods. The respondents disagreed with the statement that E-learning will eventually replace all other training methods.

4.3.2 Summary of Lecturers Profile

FIGURE 4: COLUMN GRAPH: LECTURERS YEARS OF EXPERIENCE
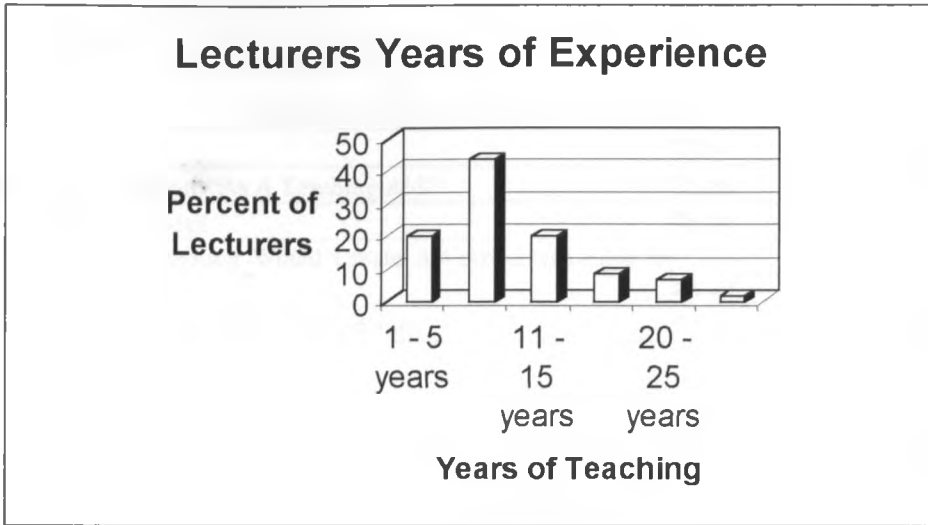
43.3% of the lecturers have teaching experience of between 6 – 10 years, 20% have experience of 1 – 5 years, 20% have experience of 11 – 15 years, 8.3% have been teaching for between 16 – 20 years, 6.7% for 20 – 25 years and 1.7% have been teaching for over 25 years. This implies that most of the teachers must be computer literate and can take little resources to make them up to date in readiness for e-learning.

FIGURE 5: WHERE LECTURERS ACCESS COMPUTERS.
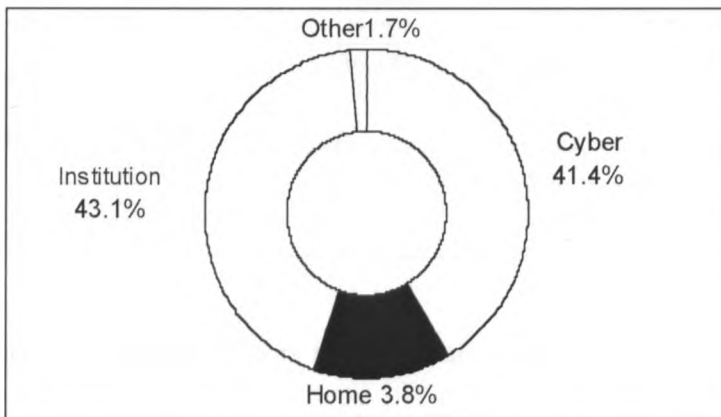
41.4% of the lecturers access their computers at a cyber café, 43.1% access a computer in the institution, 3.8% access their computers at home and 1.7% access computers at other

places not specified. This implies that if the great percentage of those who want to access computer can pay their way in a cyber café, then there is a lot of enthusiasm for e-learning from the lecturers.

TABLE 4.18: LECTURERS OPINIONS

	YES	NO	Total
Do You Use A Computer As A Teaching Aid?	35.00	65.00	100.00
Do You Have An E-Mail	78.30	21.70	100.00
Do You Think E-Learning Would Create A Competitive Edge In Kenya Polytechnic?	86.70	13.30	100.00
Would E-Learning Offer Better Methodology	79.70	20.30	100.00

Only 35% of the lecturers use a computer as a teaching aid while 65% do not. However, 79.7% of them indicated that e-learning would offer a better methodology. 78.3% of the lecturers have an e-mail address. 86.7% indicated that e-learning would create a competitive edge in Kenya Polytechnic.

4.3.3: Factor Analysis – Lecturers

TABLE 4.19: TOTAL VARIANCE EXPLAINED

Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.024	43.207	43.207	3.02	43.207	43.207	2.39	34.166	34.166
2	1.13	16.142	59.349	1.13	16.142	59.349	1.76	25.183	59.349
3	0.851	12.152	71.501						
4	0.73	10.427	81.928						
5	0.582	8.315	90.243						
6	0.394	5.631	95.874						
7	0.289	4.126	100						

To be able to pick the sufficient factors from several components, factor loadings in every component was determined using eigen values. The components with eigen values of 1 and above were picked. 59.349% of the all factors were extracted. This can be seen from the table above. After the identification of the factors by Eigen values was made, these

components and factors are rotated using Varimax to determine the maximum variables in each factor matrix. The result gives the factors and the components that comprise that factor. From these components of each factor were identified from the rotated component matrix table below.

TABLE 4.20: ROTATED FACTOR MATRIX

	Component	
	1	2
E-Learning Can Be Flexible Than Other Training Methods, Due To Its Potential To Be Accessed Anytime	0.771	2.16E-02
E-Learning As A Method Of Delivering Training Is Likely To Increase In The Future	0.767	0.37
Current And Future Potential Use Of E - Learning Readiness Factors- Most Organizations In The Future Will Be Using A Combination Of E-Learning Ad Other Training Methods	0.744	0.322
E-Learning Has The Potential To Be Less Costly Than Other Training Methods	0.716	6.86E-02
E-Learning Will Eventually Replace All Other Training Methods	-4.06E-02	0.808
In General, E-Learning Can Facilitate Participation, Involvement And Learning Better Than Other Training Methods	0.234	0.752
E-Learning Can Be More Appealing Training Delivery Method Due To Its Use Of Graphics And Multimedia	0.296	0.547

From this table it can be seen that Factor 1 named The Future of E-Learning is comprised of the following components: -

1) E-learning can be flexible than other training methods, due to its potential to be accessed anytime – 77.1%

2) E-learning as a method of delivering training is likely to increase in the future – 76.7%

3) Current and future potential use of e - learning readiness factors- most organizations in the future will be using a combination of e-learning ad other training methods – 74.4%

4) E-learning has the potential to be less costly than other training methods – 71.6%

Factor 2 named E-Learning Delivery Methodology is comprised of the following components: -

1) E-learning will eventually replace all other training methods – 80.8%

2) In general, e-learning can facilitate participation, involvement and learning better than other training methods – 75.2%

3) E-learning can be more appealing training delivery method due to its use of graphics and multimedia – 54.7%

CHAPTER 5

SUMMARY AND CONCLUSION

5.1 SUMMARY

This was a case study to determine the E-Readiness factors for E-Learning at Kenya Polytechnic, Nairobi. The survey was carried out by use of a semi-structured questionnaire, which was administered on students, the lecturers and the administrators. The analysis was done separately for each group of respondents. The findings indicate that there was an indication of enthusiasm on the subject and the respondents in general indicated that E-Learning could create a competitive advantage for Kenya Polytechnic.

On the profile of the respondents it was found that as for the students, majority of the respondents were in their early years at the polytechnic and can benefit from e-learning. Majority of them are already computer literate and access computers on a regular basis wherever they can find one in the cafes, institution or home. An overwhelming majority of them have great expectation about e-learning and its competitive advantages to them and to the institution and enthusiasm about its methodology.

In comparing the traditional method of learning with E-Learning the students indicated that there are so many disadvantages that the traditional class room learning method face. The major disadvantages cited were that the traditional learning method was monotonous/boring, tedious and cumbersome, time wasting, difficult to formulated and disseminate knowledge, research is outdated, lack of facilities. The other disadvantages cited by the respondents include: - unconvincing methodology, no concentration in class, expensive, congestion, bias between students and lecturers, students unable to specialize in

41

one field, not interactive, do not participate fully, require extra research, show off lecturers, only one way traffic, no access to outside world, limited time, lack of flexibility, easy to forget, very dirty, undermined, poor teaching atmosphere, less practical, lack of motivation, excessive human resource, and it encourages immorality.

Most of the respondents strongly agreed with the following statements that for e-learning to be successful: -

1) The learner must be given time to participate in an e-learning course

2) The learner must have easy access to a computer

3) The learner must poses a strong level of motivation

4) The learner must be willing o learn via computer

5) The learner must be highly confident with the use of computers

6) The learner must be open minded and positive to new forms of training

The other statement had a large standard deviation, which meant that the statements had diverse views, which could range from agreed to disagree. These are statements included that

1) The learner must have easy access to technical staff

2) The learner must see learning as a personal advantage and for career development

3) The learner must be able to take responsibility for much of their own learning

4) The learner must be motivated to learn

5) The learner must have sound management skills so that they take time off for participation

6) The learner must be somewhat dissatisfied with previous training methods

Using factor analysis to identify the factors that determine the success and the readiness for e- learning several factors were identified according to the students' responses. The factors identified by the students included: -

1) The Learner Computer Literacy

2) Technical Support.

3) The Learners' Character

4) The Learner's Motivation

The administration on the other hand responded to the survey by giving their opinion. The respondents agreed with majority of the statements. Standard deviation shows how close the diversion from the statement between the respondents. From this it can be seen that the respondents strongly agreed with the statements that e-learning content must be up-to-date and relevant, training evaluation methods must exist and be used, e-learning must view learning as an investment, not a cost, e-learning must be strongly supported by top management, the e-learning content must be appealing, e-learning strategy must be closely connected to broader organizational strategies and goals, learning support mechanisms, such as learning management systems, must exist, the values for e-learning must be communicated and accepted throughout the organization.

According to the administration there are at most 30 computers in their computer laboratory. There indication is that there are already in place a will to implement the methodology if it can be decided on. However there is conflicting responses meaning that there is little coordination on what is available in the institution.

All the administrators already have e-mail addresses and most of them have computers in their offices and the same number indicated that E-learning would create competitive edge

for Kenya Polytechnic. All the administrators also indicated that E-learning would offer a better methodology for training. This shows that there is some readiness for e-learning in the institution already.

According to the administrators several factors are important in readiness for e-learning. These factors include: -

1) The Learning Mechanisms
2) E-Learning Culture.
3) E-Learning Management Support.

A small proportion of the lecturers already use computer aids in teaching. Majority of them reckon that e-learning offers a better methodology and would lead to a competitive advantage for Kenya Polytechnic.

In determining the readiness for E-learning, the following factors were gathered from the lecturers. It was found that the respondents strongly agreed with the statements that; E-learning as a method of delivering training is likely to increase in the future, most organizations in the future will be using a combination of e-learning and other training methods. The respondents agreed with the statements that; E-learning can be more appealing training delivery method due to its use of graphics and multimedia, E-learning can be flexible than other training methods, due to its potential to be accessed anytime, In general, e-learning can facilitate participation, involvement and learning better than other training methods. The respondents were more or less neutral to the statement that, E-learning has the potential to be less costly than other training methods. The respondents

disagreed with the statement that E-learning will eventually replace all other training methods.

By using factor analysis to determine the factors that are important in e-readiness for e-learning, the survey came up with the following factors according to the lecturers. The lecturers indicated that for e-learning to succeed and that for the polytechnic to be e-ready, it is important that the following factors must be considered.

1) The Future of E-Learning.

2) E-Learning Delivery Methodology.

5.2 Conclusions

In conclusion, the survey achieved the objectives of which it was set to achieve. The objectives of the study were: -

1. To investigate e-learning readiness factors in Kenya Polytechnic
2. To determine the competencies required for e-learning operating environment

The survey established that E-Readiness for E-Learning could be achieved if the following environment can be achieved. For the learner, the following must be present: -

1) The Learner Computer Literacy

2) The Learners' Character

3) The Learner's Motivation

For the Organization the following factors have to be there: -

1) E-Learning Management Support

2) E-Learning Culture.

For the content, the following factors have to be made available: -

1) The Learning Mechanisms

2) E-Learning Delivery Methodology

For the technical requirements the following has to be present: -

1) Technical Support.

Other factor that is important to be considered is: -

1) The Future of E-Learning.

5.3 Limitations of Study

E- learning is relatively very new concept in our business society and is an area that has not been explored at all, for this reasons there could be issues that the questionnaire may not have captured well. Another limitations is that the research design is a case study and the findings may not be generated for other institutions. Since the survey took place in a large campus, there was a lot of strain in providing the necessary resources to make the survey successful such as finances for doing the questionnaires, the time taken in the process to interview and collect the responses.

5.4 Suggestions For Future Research

The study is very specific to Kenya Polytechnic Institutions and I would further recommend a further study more general, be able to support a more general view on the e-readiness factors so that when institutions of higher learning intends to implement e-learning as a learning strategy the critical factor are address first. E- learning is not a solution to all future training requirements; it is more of another training strategy. I would suggest that a study be carried out to determine the e − learning readiness in other institutions of learning and even to find out about e-government. A study of e − readiness in business since the world is on information mode and age.

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STUDENTS

Purpose of the questionnaire

The purpose of this questionnaire is for a research project for which the researcher wishes to establish the key factors for e-learning readiness in Kenya Polytechnic. "e" stands for electronic.

Section A

Please select by ticking the appropriate box

Which year of study are you?

Ordinary Diploma Year 1 ☐

Ordinary Diploma Year 2 ☐

Ordinary Diploma Year 3 ☐

Higher Diploma

Year 1 ☐

Year 2 ☐

Where do you access a computer?

Cyber café ☐

Home ☐

Institution ☐

Other ☐

How often do you use a computer?

Per day ☐

Per week ☐

Per month ☐

Do you have an email address?

Yes ☐   No ☐

Section B

Please indicate by selecting your level of agreement to each of the following statements in regards to individual e-learning readiness factors.

(Tick where appropriate)

1.=Agree Strongly 2.=Agree somewhat 3.=Neutral 4.=Disagree somewhat
5.=Disagree strongly

	1	2	3	4	5
1. The learner must have easy access to a computer					
2. The learner must be willing to learn via computer					
3. The learner must be motivated to learn					
4. The learner must poses some computer skills					
5. The learner must have easy access to technical staff					
6. The learner must see learning as a personal advantage and for career development					
7. The learner must be given time to participate in an e-learning course					
8. The learner must poses a strong level of motivation					
9. The learner must be able to take responsibility for much of their own learning					
10. The learner must be open minded and positive to new forms of training					
11. The learner must be highly confident with the use of computers					
12. The learner must have sound management skills so that they take time off for participation					
13. The learner must be somewhat dissatisfied with previous training methods					

Section C

a) **Do you think e-learning would create a competitive edge in Kenya polytechnic?**

_____

_____

_____

b) **Please list out three disadvantages of traditional classroom learning**

    i)   _____

    ii) _____

    iii) _____

c)   **Would e-learning offer a better methodology**

Yes / No (Comment)

_____

_____

_____

ADMINISTRATION

Purpose of the questionnaire

The purpose of this questionnaire is for a research project for which the researcher wishes to establish the key factors for e-learning readiness in Kenya Polytechnic. "e" stands for electronic.

Section A

a) How many computers are in your computer lab?

Between 0 - 10 ☐   Between 11 – 20 ☐   Between 21 – 30 Above 30   ☐

b) What is computer student ratio?

1:1   ☐   **1:2** ☐   **1:3** ☐ **Other** ☐

    d) How often do the student visit the lab per week

Once   ☐
Twice   ☐
Thrice   ☐
Other   ☐

    e) Do you use computers in your office

Yes ☐   **No** ☐

Section B

Please indicate by selecting your level of agreement to each of the following statements in regards to organizational, technological and cultural e-learning readiness factors
(Tick where appropriate)

1.=Agree Strongly 2.=Agree somewhat 3.=Neutral 4.=Disagree somewhat
5.=Disagree strongly

	1	2	3	4	5
1. The network connection must be fast and reliable					
2. E-learning content must be up-to-date and relevant					
3. The organization must view learning as an investment, not a cost					
4. The e-learning content must be appealing to the user					
5. Training evaluation methods must exist and be used					
6. E-learning strategy must be closely connected to broader organizational strategies and goals					
7. E-learning must be strongly supported by top management					
8. Learning support mechanisms, such as learning management systems, must exist					
9. The values for e-learning must be communicated and accepted throughout the organization					

Section C

a) Do you have an email address? (Yes/No)

Comment_____

_____

_____

b) Do you think e-learning would create a competitive edge in Kenya polytechnic?

_____

_____

_____

c)   Would e-learning offer a better methodology

Yes / No (Comment)

_____

_____

_____

LECTURER

Purpose of the questionnaire

The purpose of this questionnaire is for a research project for which the researcher wishes to establish the key factors for e-learning readiness in Kenya Polytechnic. "e" stands for electronic.

Please indicate by selecting your level of agreement to each of the following statements in regards to current and future potential use of e-learning readiness factors. (Tick where appropriate)

1.= Agree Strongly 2.=Agree somewhat 3.=Neutral 4.=Disagree somewhat
5.=Disagree strongly

	1	2	3	4	5
1. Most organizations in the future will be using a combination of e-learning and other training methods					
2. E-learning as a method of delivering training is likely to increase in the future					
3. E-learning can be flexible than other training methods, due to its potential to be accessed anytime.					
4. E-learning has the potential of to be less costly than other training methods					
5. E-learning can be more appealing training delivery method due to its use of graphics and multimedia					
6. In general, e-learning can facilitate participation, involvement and learning better than other training methods.					
7. E-learning will eventually replace all other training methods.					

Section C

a). Do you think e-learning would create a competitive edge in Kenya polytechnic?

_____

_____

_____

b). Please list out three disadvantages of traditional classroom learning

   i. _____

  ii. _____

 iii. _____

c). Would e-learning offer a better methodology

    Yes / No (Comment)

_____

_____

_____