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THE IMPACT OF E-LEARNING ON TEACHING AND LEARNING IN CAPE COAST POLYTECHNIC.

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ABSTRACT

E-learning is gaining some ground in Tertiary education throughout the world. The era when blackboards and chalks dominated the transmission of knowledge is quickly giving way to the era of Information Communication Technology (ICT). Despite this wide spread adoption of E-learning in tertiary education, research on E-learning implementation suggests that it has not reached its full potential. The aim is to investigate into the impact of E-learning implementation on teaching and learning in the Tertiary Education. The objectives are to identify the acceptance level of E-learning acceptance in the Tertiary Education; to find out the perception of academic staff and students on E-learning; to identify the main barriers to the implementation of E-learning in the Tertiary Education and to identify the impact of e-learning on teaching and learning in Tertiary Education. Convenience sampling was used in selecting the student's sample. The purposive sampling technique was employed to select the academic staff. A structured questionnaire was developed, pretested and administered to a sample of 306 and 36 in respect of students and lecturers respectively. Descriptive statistics was used to analyse the data. The results indicate that E-learning in the Tertiary education is still at its infant stage and that the management and lecturers have not established broader E-learning services that would trigger students to adopt e-learning as a mode of knowledge transmission. The lack of regular electric power supply on campus, the level of computer and internet skills appear to be the major factors which are most likely impact negatively on student's effort to adopt e-learning.

Keywords: impact; e-learning; teaching; learning; polytechnic

INTRODUCTION

The emergence of the Information and Communication Technology (ICT) and its continuous development over the years has made tremendous impact in all areas of our lives as human beings. Since the conception of the internet and web, the teaching and learning field has experienced some both positive and negative effects.

Today's world developed economies are gradually moving away from the traditional classroom teaching and learning which is both restrictive and lacks innovation and have quickly adopted the use of the electronic mail (e-mail) and the World Wide Web (www) for teaching and learning. The internet provides the interactivity needed by both teacher and learner hence making distance learning programs feasible in our time. A wide range of terminology of e-learning has been



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deliberated by different researchers including home study, independent study, open learning, correspondence education and e-learning.

According to Chambers (2006), “the biggest growth in the Internet, and the area that will prove to be one of the biggest agents of change, will be in e-learning.” The demand for a well-educated manpower has driven many countries to rethink their education systems. An education system has to be suited to the demands of the technological age so that a competitive edge can be maintained.

Galagan (2002), expressed, that advantages that technology provides to training and learning include not only the opportunity of one-on-one interface for every learner, the ability to suggest new ideas, the prospect to try things out at one’s own pace and to fail in private without the fear of ridicule from other students. The Internet has also become a vital instructional tool to assist the transfer of many types of information from one computer to another, and is quickly becoming an effective means of communication in schools and colleges. Internet-based instruction has been manifested in one-to-one (tutor-to-student), one-to-many (tutor-to-group) and many-to-many (group-to-group).

According to Campbell (2004), in the school segment, “e-learning” refers to the use of both software-based and online learning, whereas in Business, Higher-Education, the Military and Training Sectors, it refers solely to a range of on-line practices.

Problem Statement

Njenga (2011) in a study on “e-learning adoption in Eastern and Southern African higher education institutions indentified some individual variables such as self efficacy, demonstrability, perceived ease of use, perceived complexity, perceived compatibility, and intrinsic motivation just to state a few as the factors having a large impact on the adoption of e-learning. In the recent study conducted by Coleman (2011) on four Universities in Ghana, namely, University of Education, Winneba, Kumasi-campus, Kwame Nkrumah University of Science and Technology (KNUST), University of Ghana (UG) and Ghana Institute of Public Administration (GIMPA) the major findings demonstrate that university managements and lecturers have not established broader e-learning facilities that would trigger students to take up e-learning course.



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Aim

The aim is to investigate into the impact of E-learning implementation on teaching and learning in the Tertiary Education.

Objectives

The objectives are to:

- Identify the acceptance level of E-learning acceptance in the Tertiary Education.
- Find out the perception of academic staff and students on E-learning.
- Identify the main barriers to the implementation of E-learning in the Tertiary Education
- Identify the impact of e-learning on teaching and learning in Tertiary Education.

The Conventional Concept of Education

Freire (1994) noted that the conventional concept of education is where the teacher is seen as the front of knowledge as long as students acknowledge this and are eager to absorb the teacher's vital knowledge. This act hinders the intellectual growth of students by turning them into "receptors" and "collectors" of information that have no real connection to their lives. The conventional approach also called banking concept is at the heart of oppression, alienation, and discrimination and student disempowerment.

It is believed that there is no significant difference that exists between traditional learning and distant technology learning that does not necessitate them as equally good or bad. Liaw (2007) notes that the great benefit of using technology in teaching and learning is that it increases flexibility where both teaching and learning can take place anytime and anywhere. Bhatt (2001) noted that the success of a technology depends on its continuance use.

The Use of Technology in Education

According to Spaniol *et al.* (2007) new developments in the Web provide individuals with various opportunities of personalizing the tools and services, and performing self-directed learning in an open and social context with their personal learning environments. Learners can autonomously combine various tools, material and human resources into personal learning environments and enter with their personal environments to various learning activities and courses. In near future fundamental transformations are predicted in enterprises.



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New post-industrial organizations will be disaggregated and not based on monolithic industrial knowledge-management systems. It is also stressed that rapid developments in economy and social sphere will extensively rely on design-orientated, information-rich small creative companies that work in a new flexible mode of producing cultural goods and services, and drive the innovation. The rapidly changing business and social environments require the development of constantly learning and creative, independent, responsible and autonomous people.

Theoretical Framework of E-Learning

E-learning refers to the use of information and communication technology (ICT) to enhance and or support learning in tertiary education. Conversely this encompasses an ample arrangement of systems, from students using e-mail and accessing course materials online while following a course on campus to programs delivered entirely online. E-learning can be different types, a campus-based institution may be offering courses, but using e-learning tied to the Internet or other online network.

E-learning is an education via the Internet, network, or standalone computer. E-learning is basically the network enabled convey of skills and knowledge. E-learning refers to using electronic applications and processes to learn. E-learning applications and processes include Web-based learning, computer-based learning, virtual classrooms and digital collaboration. E-learning is when content is delivered via the Internet, intranet/extranet, audio or video tape, satellite TV, and CDROM. E-learning was originally called "Internet-Based training" then

"Web-Based Training", today one will still find these terms being used, along with variations of e-learning. E-learning is not only about training and instruction but also about learning that is tailored to individual. Different terminologies have been used to define learning that takes place online. E-learning and distance learning is not quite the same thing but are different. The basic thing that distinguishes distance education is the physical separation of the students from the teacher/instructor and the class room. E-learning, nonetheless, is considered to be as part of the classroom environment from the beginning. The early use of computers and ICT were geared to support the classroom instructional methods. Gradually, as more and more personal computers became available, the thought of online classes was investigated and explored by some pioneering Colleges and Universities. In recent years, computer programs for e-learning consisting of tools such as text, graphics, video, three dimensional objects and animation have been developed.



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The use of e-learning in Teacher Education

Educators agree that to prepare students for the 21st century, our educational system requires broad and intensive use of technology; therefore, teachers must adjust their traditional modes of instruction to include these 21st century skills. For instance, teachers' use of the internet is necessary in order to connect children to the real world in an increasingly global learning environment. However, it is also found that a significant gap exists between the knowledge and skills needed for success in life and the current primary and secondary education systems in place throughout the world.

This lack of technology integration is a problem for today's teachers as many researchers have noted the importance of utilizing technology in class-rooms. Technology needs to be part of the daily curriculum in elementary and secondary school, yet this is often not the case.

Research Methods

The research is quantitative in nature. The total academic staff for the three schools is Ninety (90) and student's population is Three thousand five hundred (3500). Convenience sampling was used in selecting the student's sample size of three hundred and six (306). The purposive sampling technique was employed to select the academic staff of thirty six (36). The instrument used for gathering data from the study population is the structured questionnaire. Descriptive statistics was used to analyse the data which involved the use of table and frequency.

Results and Discussion

Out of three hundred and six (306) questionnaires administered for the students, two hundred and forty (240) representing an 80% response rate were collected and the lecturers thirty (31) one out of the total of thirty six (36) representing 86% rate were collected.



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Table 1: A Table showing Students Level of Technology/Computer Skills

Students Computer Technology Skills	Frequency (n=240)	Percentage %
Beginner	110	46
Competent	105	44
Proficient	15	6
Expert	10	4

Source: Field Survey 2014

Table 1 shows the various levels of students’ computer or technology skills. The data revealed that (110) of the students (46%) were beginners with regards to their computer skills, followed (105) students representing (44%) were competent, (15) students seems proficient while (10) students representing (4%) were expert. It therefore appears that the majority of students (50%) have a fairly good experience and respectable level of knowledge with computer skills and technology.

Access to Internet at home

One hundred and forty –Six representing (61%) responded that they have internet access at home while 94 representing 39%, responded they do not have internet access at home. Moreover, 120 of the respondents used Modem type of internet connectivity at home, 80 respondents used the Broadband type of internet while 40 do not use either of them simply because they do not have internet access at home.

Type of Technology Access outside the Polytechnic Campus

According to the students, (50) of them representing (20.8%) have a personal computer but do not have access to any internet connectivity. Twenty eight (28) representing (11.7%) do have access to a computer but only part of the time, (130) of the respondents (54.2% had personal computer as well as internet connectivity, and (32) respondents representing (13.3%) had access to a computer with internet connectivity occasionally. It is evident therefore that more than half of the respondents do have computers with internet connectivity at home. Table 2 below depicts the technology access outside the Polytechnic campus.



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Table 2: A Table showing Technology access outside Cape Coast Polytechnic campus

Technology Access	Frequency (n= 240)	Percentage %
Personal Computer but no internet connectivity	50	20.8
Access to a computer occasionally	28	11.7
Personal computer with internet access	130	54.2
Access to personal computer with internet occasionally	32	13.3
TOTAL	240	100

Students Experience with e-learning

42 respondents (17.5%) had taken at least one full e-learning course before. 170 of the respondents had never taken any online course before, 28 respondents (11.6%) had taken a hybrid course before. It therefore appears that the majority of students of the institution are not conversant with e-learning. One hundred and seventy one (171) respondents (71.25%) had no exposure to e-learning, 42 respondents (17.5%) had minimal exposure, 20 respondents had moderate and 7 respondents (2.92%) had been exposed to a high amount of e-learning materials in their program.

Usage of Internet for Educational Purposes

Respondents were asked to indicate whether the availability of the internet access was mostly used for educational purposes and they should rate their daily usage of their access to the internet in terms of number of minutes spent daily on the internet for educational purposes. 20 students (8.3%) use the internet for less than 20 minutes, 45 of the respondents(18.7%) use the internet between 20-40 minutes. 70 respondents (29.2%) use the internet up to 120 minutes daily, 105 respondents(43.8%) use the internet for educational purposes for two hours or more daily thus 120 minutes and above. This implies that the students do use the internet daily irrespective of the variations in their daily usage in terms of minutes.



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The lecturers had been exposed to e-learning materials. All the same, there are variations in terms of how much they had been exposed to. Respondents were asked to rate the quantum of how much e-learning materials they have been exposed to so far as their lecturing were concerned. 4 respondents (12.9%) have had minimal exposure to e-learning. While 10 respondents (32.3%) had moderate exposure and 17 of them (54.8%) had a high amount of e-learning materials been exposed to their lecturing profession. Therefore, it appears that the majority of the lecturers fall between the moderate and high levels of exposure to e-learning materials.

Ghana as well as Africa has a low internet penetration which is estimated that only 1 in 250 people have access to the internet as opposed the global average of 1 in 15. Researchers have shown that teaching resources are inadequate in the higher education; Ghana is more familiar to the traditional lecture mode of instruction delivery.

Table 3: Factors Likely to Impact Negatively on Students Usage of E-Learning Courses

NO.	Factors likely to impact negatively on E-learning	Frequency					TOTAL	MEAN
		HUL (1)	UL (2)	N (3)	L(4)	VL (5)		
1	Lack of regular electric power supply on campus	4 (4)	6(12)	11(33)	20(80)	199(995)	1124	4.68
2	Student level of computer and internet skills	5(5)	8(16)	7 (21)	33(12)	187(935)	1109	4.62
3	The absence of lectures and other classroom activities	25 (25)	26(52)	39(11)	55(220)	150(750)	1164	4.85
4	Student level of access to computer and internet connectivity	9(9)	20(40)	20(60)	50(200)	141(705)	1014	4.23



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5	Student inability to see and talk to the instructor of this course	5(5)	15(30)	21(63)	60(240)	139(695)	1033	4.30
6	The absence of a final written examination	10(10)	10(20)	16(48)	70(280)	134(670)	1028	4.28
7	Ability to participate in group work	9(9)	6(12)	7 (21)	90(360)	128(640)	1042	4.34
8	Student level of access to library books and other resources	7(7)	4(8)	8 (24)	99(396)	122(610)	1045	4.35
9	participation in other courses	13(13)	7(14)	24(72)	78(156)	118(590)	845	3.52
10	other personal obligations	17 (17)	28(56)	15(45)	65(260)	115(575)	953	3.97

Among the ten factors that likely to impact negatively on students usage of e-learning courses, three factors were critical and these included the absence of lectures and other classroom; lack of regular electric power supply on campus and student level of computer and internet skills mean of 4.85; 4.68; and 4.62 respectively.

It appears that the most important barrier likely to affect the implementation of e-learning implementation is Poor internet connectivity and persistent power failure with 87.1% followed by three other factors with the same percentage of 80.6%, and which are: Lack of management vision for e-learning, low internet speed and low management commitment to e-learning.

The imperative barrier to e-learning, is the absence of face to face communication. In this study, it was found out that the barriers to the implementation of e-learning in the University of Education Winneba are as follows (in order of importance): Poor internet connectivity; Persistent power failure; Lack of management vision for e-learning; Low internet speed; Low management commitment for e-learning; Fear of Internet fraud and Lack of managerial experience in e-learning



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CONCLUSION

The Polytechnic has very weak and undeveloped e-learning system and hence the impact of the revolution in educational technology is not being maximized. Students and lectures in the two faculties pointed out that the e-learning facilities currently being used are very few and insufficient. With respect to e-learning delivery modes, the data showed that although the polytechnic has made progressive investment to provide internet facilities to both students and lecturers that will enhance e-learning, yet lecturers and student have very low level of knowledge of the various e-learning delivery modes. Hence both parties are not taking advantage of it.

The factors which are most likely to impact negatively on students to hinder them from attending e-learning courses are: Lack of regular supply of electric power on campus and the level of computer and internet skills. Concerning the barriers to the implementation of e-learning implementation, the most important barrier likely to have an effect on the implementation of e-learning has been established to be “ Poor internet connectivity” followed by four other factors in a descending order are: Persistent power failure, Lack of management vision for e-learning, Low internet speed and Low management commitment for e-learning.

Recommendations

The Management of the Polytechnic needs to be awakened to this empirical reality and take pragmatic steps to ensure that e-learning implementation is enhanced. This will improve and stimulate both lecturers and students usage of e-learning in all spheres of academic ladder. This can practically be done by inculcating e-learning into the polytechnic programs where lecturers will be given in-service training on the use of e-learning materials to facilitate them apply into their delivering processes. This will also be of assistance to lecturers to sensitize and encourage students to adopt e-learning in their academic pursuits.

The library should be well resourced with E- publications of which students will be encouraged to use.



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