EXPLORING THE REASONS FOR A FAILURE OF ONLINE EDUCATIONAL PORTALS IN DEVELOPING COUNTRIES: A CASE STUDY OF KOFORIDUA POLYTECHNIC IN GHANA

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ABSTRACT

Most Ghanaian polytechnic institutions are not running online education. Koforidua Polytechnic is among the ten (10) polytechnics in Ghana with a distinguishing feature of an online educational portal. The portal is being underutilized and it is in view of this that the research was conducted. This study examined how students, lecturers and administrators perceive the quality and reliability of the polytechnic's online educational portal and the challenges faced using it. Descriptive survey method was used with stratified random sampling. Self-administered questionnaires were completed by 110 respondents. Statistical Package for Social Sciences (SPSS) and Microsoft's Office Excel was used to analyze the data gathered. It is observed that the portal is a very good platform that can help in facilitating teaching, learning and the day-to-day running of the polytechnic. Another relevant issue which was raised by the students was the fact that online portal enables busy fulltime workers to be able to combine working and learning. It was also observed that the online portal is still underutilized by students, lecturers and administrators. This study recommends that there must be a policy to use the portal as a channel for communication, learning and teaching. Training should also be organized for all staff on the use of the portal. Resources needed for the portal to function well must also be available. Future research needs to be done in the area of Eduportals in other institutions, involving a larger learner population.

Keywords: *online education; educational portal; stratified random sampling; workers; communication*

INTRODUCTION

The progress in information technologies and the increased usage of the Internet have had an impressive impact not only in business and government but also education. This effect of the Internet on our daily life is a global experience. However, in certain parts of the world especially in poor economies, the adoption of emerging technologies remains a challenge as a result of factors including poor education and infrastructure. Academic institutions increasingly spend large sums of money to provide network connections to within and outside their campuses. In 2003,, Ghana launched the Information Communication and Technology (ICT) Policy for Accelerated Development (ICT4AD Policy). The policy seeks, among other things, to address the development challenges and accelerate its socio-

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economic development process through the development, deployment and exploitation of ICT. The basic motivation of the Policy is that the accelerated development of Ghana, within the emerging information and digital age, will not be possible without an ICT-driven development agenda (Republic of Ghana, 2003).

One of such innovations was the introduction of online educational portal into teaching and learning at the polytechnics. Koforidua Polytechnic is among the ten (10) polytechnics in Ghana and it is located in Koforidua in the Eastern region of Ghana. A distinguishing feature of Koforidua Polytechnic is its wide application of modern ICT facilities including the use of online educational portal delivered by the e-Learning Centre and a strong fiber optic Internet connectivity. However, the online educational service provided by its online educational portal is merely uploading of less than 10% of the total number of courses outlines and teaching materials. The e-learning centre which hosts the portal is being underutilized. This study is aimed at filling the gap by expanding existing literature as well as measuring how students, lecturers and administrators perceive the quality and effectiveness of the polytechnic's online educational portal. The results of this research can help the school's management toincrease the use of its existing online educational portal.

DEFINITION OF ELECTRONIC LEARNING

No single definition can accurately describe the concept of e-learning. Some authors explicitly define e-learning, while others imply a specific definition or view of e-learning in their article. In particular, Ellis (2004) disagrees with authors like Nichols (2003) who define e-learning as strictly being accessible using technological tools that are web-based, web-distributed, or web-capable. The belief that e-learning not only covers content and instructional methods delivered via CD-ROM, the Internet or an Intranet (Benson et al., 2002; Clark, 2002) but also includes audio and videotape, satellite broadcast and interactive TV is the one held by Ellis. Although technological characteristics are included in the definition of the term, Tavangarian, Leypold, Nölting, Röser, and Voigt (2004) as well as Triacca, Bolchini, Botturi, and Inversini (2004) felt that the technology being used was insufficient as a descriptor. Tavangarian et al. (2004) included the constructivist theoretical model as a framework for their definition by stating that e-learning is not only procedural but also shows some transformation of an individual's experience into the individual's knowledge through the knowledge construction process. Both Ellis (2004) and Triacca et al. (2004) believed that some level of interactivity needs to be included to make the definition truly applicable in describing the learning experience, even though Triacca et al. (2004) added that e-learning was a type of online learning. According to Sak, Skalková and Mareš (2007) cited in Vaněček et al, (2010) e-learning is studying by the means of electronic media; be it learning through CD or Internet. They were also of the view that e-learning is an education supported by modern electronic means such as computers, media, and Internet in distant learning, combined and full-time study. In this paper, e-learning is defined as an educational course created in Learning Management Systems (LMS) which is intended for self-study under supervision of a teacher who communicates with a student in an electronic manner through the use of electronic media and ICT.

HISTORY OF ELECTRONIC EDUCATION

According to Vaněček et al, (2010) electronic education is a relatively new way of delivering education. Its history started way back in 1990s, alongside the development of the Internet. The first e-learning attempt was through learning machines, the first of which was constructed in the 1920s by the psychologist S. L. Pressey. The next attempt at e-learning program appeared in the 1950s. It consisted mostly of distribution of educational

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content by floppy disks or CD-ROM, this manner of application is often called Computer Based Training (CBT). This method of education has many problems such as the inability to update the content of learning materials and the lack of contact between the student and the teacher as well as with other students.

True e-learning emerged after the year 1993 alongside with the development of the web. Initially, there were only static sites, where learning materials were available, and communication or contact with the teacher either did not take place at all, but only through email. This phase is often called Web Based Training (WBT). Later, alongside with the development of Internet technologies, more elaborated courses begun to appear, enabling better cooperation, contact with a teacher, and feedback. The content could now be updated.

Today, e-learning is widely found, not only in educational institutions, but also in commercial firms which uses it to support the lifelong learning of their employees.

BENEFITS AND DISADVANTAGES OF ONLINE EDUCATION

As technology enables interactive presentation of learning materials across borders, there is evidence of enormous enthusiasm on the part of organizations to pursue the development of this approach, and benefit from the opportunities it introduces. While e-learning has been portrayed as requiring high investment in terms of hardware, software and design time, it has also been portrayed as cost effective in the long run, with the ability to provide speedy and flexible training (Torrington, Hall, & Taylor, 2008, p. 431).

There are a number of advantages in taking online education courses as compared to the traditional methods. The main advantage of online-based education is the flexibility it offers. Lectures can take at any time of the day according to what suits best for each student. It also allows individuals with full-time jobs and those who are unable to attend the normal traditional lectures to have uninterrupted access to quality education (Jayawardhena and Foley, 2000). For many people, this opportunity to earn a degree can open many new opportunities for a better or more fulfilling job.

Online courses are becoming popular all over the world. At its best, online courses are convenient ways for students to get education. However, online education still suffers from a stigma because it is not "traditional." Some online universities or polytechnics are incorporating classroom component, where students are required to attend classroom session once a month. Another drawback of online education is that it is self-paced. For some, they are able to learn at their own speed. While others, struggle to learn without a structured study plan

ELECTRONIC EDUCATION IN GHANA

Most of the current electronic education initiatives on the continent have been used to upgrade the quality of basic education (Association for the Development of Education in Africa [ADEA], 1999). Although electronic education holds promises, a number of obstacles have to be addressed before it can be fully utilized in Africa. The e-learning Africa report (2012) highlights some of the most significant constraining factor as being limited bandwidth (17%), followed by the lack of financial resources, inadequate human resource capacity and limited electricity, with both factors atat 11%. The report was conducted in selected African countries which includes Ghana, Nigeria, Zambia, Tanzania, Kenya, South Africa and Uganda.

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As it is the case with other African countries, the implementation of e-learning platform in Ghanaian universities and polytechnics is very low despite of the opportunities that are provided by the conducive environment created by the government. This document presents the vision for Ghana in the information age. It is based on the Policy Framework Document: "An Integrated ICT-led Socio-economic Development Policy and Plan Development Framework for Ghana". The development of this policy framework document was based on a nation-wide consultative process involving all key stakeholders in the public sector, private sector and civil society. It fully takes into account the aspirations and the provisions of key socio-economic development framework documents including: the Vision 2020 – The First Steps; the Ghana Poverty Reduction Strategy (GPRS) and the Co-ordinated Programme for Economic and Social Development of Ghana. It sets out the road map for the development of Ghana's information society and economy and provides a basis for facilitating the socio-economic development of the country in the emerging information, knowledge and technological age to be dominated by information and knowledge-based economies.

KOFORIDUA POLYTECHNIC ONLINE LEARNING SYSTEM

Koforidua Polytechnic was established in the year 1997. The Polytechnic, which was founded with the vision of producing high-level, career-focused and skilled manpower to support the country's industrial growth, has produced graduates with Higher National Diploma (HND) in Accountancy, Marketing, Purchasing and Supply Statistics and Computer Science. The Polytechnic currently has three Schools and one Institute namely, the School of Business and Management Studies, School of Applied Science and Technology, the School of Engineering and the Institute of Open and Distance Learning (IODL). In keeping with its Strategic Plan (2010 – 2014) to increase access to tertiary education for many prospective students, the Polytechnic currently runs five Bachelor of Technology (B. Tech) programmes in Procurement, Automotive Engineering, Renewable Energy Systems Engineering, Accounting and Telecommunication Engineering. Newer programmes are at various stages of the accreditation process.

As the world today is becoming rapidly open due to the World Wide Web and Internet, the role of Internet in teaching and learning is gaining importance around the world. As such, the academic institutions are facing a new frontier opportunities as well as challenges. In order to these opportunities and challenges, Koforidua Polytechnic of Ghana provided a cyberspace environment for teaching and learning in 2011. Koforidua Polytechnic offers an online educational portal based on Moodle. Moodle is a free web application that educators can use to create effective online learning channels. This collaborative learning environment are used by hundreds of institutions worldwide provides group management, forums, document repositories, calendar, chat, assignments areas, links to relevant websites, and user profile administration.

LITERATURE REVIEW

Literature review reveals that technology related factors regarding online learning were linked to the features of software and hardware used to provide the learning environment. Studies about online learning and e-learning shows that the quality of online learning is mostly related with usability of web-sites (Dobbs, 2000; Fabianic, 2002; and Zhao, 2003). It seems natural given that students in online learning as well as in traditional learning are dependent on search engines and websites nowadays. Fabianic (2002) and Dobbs (2000) analyzed the criteria especially used by students to judge the quality of an e-learning

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website. The criteria identified are: presentation, navigability, reliability, external recognition, responsiveness, speed, customer care, access, content relevancy, content richness, content currency, site aesthetics, personalization, authority, assurance, FAQs and help, special services, tailored communication, and trust. Other scholars indicated that the use of multiple technologies in different contexts was crucial for effectiveness of online learning. Benbunan-Fich, et al. (2005) consider 'media mix' to be the most important variable since selecting right technology should be based on pedagogical technique (i.e., peer evaluation and feedback, group case discussion) and thus, it is related to the enhancement of learning.

The mode of online courses is generally in one of the following three types:
(1) Course is supplemented by tutorial support with a low level of interaction.
(2) Online interactions and discussions occupy half the students' time.
(3) Course is defined by collaborative activities, discussions, and group assignments. (Mason, 1998).

Some of the resources available on a course website are:
• Power point presentations used in lectures
• Course reading lists
• Selected links to websites related to the discipline, including online journals and readings, and library holdings
• Course schedule, including due dates for assignments
• Assignments, exam questions
• Self-assessment tests
• Online discussion forums, for post-lecture discussions
• Biographies of the course teacher or teachers
• Student biographies

RESEARCH METHOD

This paper is based on a case study, where both quantitative (questionnaires) and qualitative (interview guide) data collection instruments were designed and used to collect data for the study to assess the effectiveness and quality of the online educational portal at Koforidua Polytechnic. This method was chosen to enable the researcher to use a methodical empirical inquiry to investigate, make sense of, or interpret the meaning of a social phenomenon as experienced by individuals themselves (Malterud, 2001 & Shank 2002). The sample students of the Polytechnic answered to items on quality online educational portal which were raised in the questionnaires while the lecturers and administrators provided detailed data on the same issue as captured in an In–depth Interview Guide. The targeted population of this research comprised of all 6100 students at various schools of Koforidua Polytechnic so that responses represent the unbiased views of all users of the portal. Since it will be costly, impractical or impossible to study the entire population, most researchers use a sampling population (Pittenger, 2003). The sampling population is a subset of the target population (Frederick & Lori-Ann, 2006). Stratified random sampling method was used to obtain a sample that is representative of the population of interest, whereby respondents were randomly selected based on the proportion of profession sub-group in the target population. The total school population of 6,100 was made up of 5,950 students 80 lecturers and 70 administrators; 110 respondents (in the proportion of 80 students (72%), 20 lecturers (18%) and 10 administrators (9%) were used as sample size.
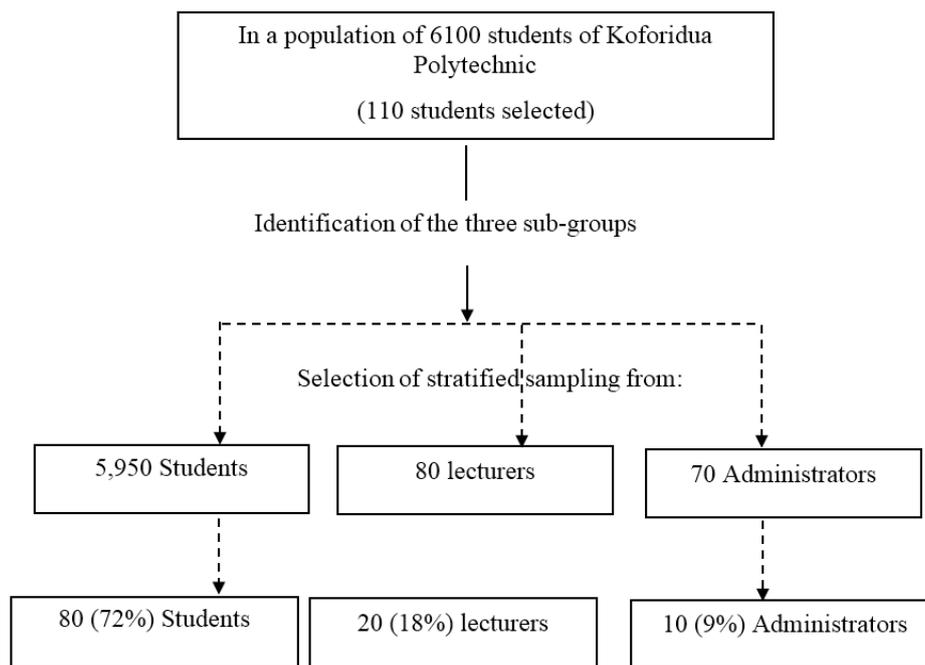
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In a population of 6100 students of Koforidua Polytechnic

(110 students selected)

Identification of the three sub-groups

Selection of stratified sampling from:

5,950 Students	80 lecturers	70 Administrators

80 (72%) Students	20 (18%) lecturers	10 (9%) Administrators

Figure 1: Stratified random sampling of the respondent

The responses received from the various respondents were examined closely to ensure accuracy and consistency. The responses were analyzed using Statistical Package for Social Science (SPSS). The responses to the open-ended questions in the questionnaires and the in-depth interviews were categorized and analyzed.

FINDINGS

Two determinants are studied in this paper: the quality and effectiveness of the polytechnic's online educational portal.

Quality and Effectiveness of the Portal

Majority of the students (60, 75 %) said that the online educational portal does not meet their academic needs. Since many students did not use the portal for the intended purpose, they could not see the relevance of the portal towards their academic needs whiles 20 (25%) said it met their academic needs.

Table 1: Effectiveness of Portal

Questions	Number of Respondents				Total
	Yes	No	%Yes	%No	Total
Have you used portal before?	65	15	81.2	18.7	80
Were you given orientation on the use of portal?	75	5	93.7	6.2	80
Is the portal helping meet your academic needs?	20	60	25	75	80

Source: Field Data

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On the part of the lecturers, questions were asked whether the portal is a perfect platform for teaching. Majority (15) of the lecturers affirmed it and (5) declined. On the issue of improving their teaching methodology, (14) lecturers stated that the portal has not improved their teaching methodology while (6) people affirmed this position and when asked if they will recommend the use of the portal to other colleagues in other polytechnics in the country, majority (13) said "yes" whiles the remaining (7) said "no" . The responses are summarized in Table 2.

Table 2: Contribution of the Portal towards Teaching

Questions	Number of Respondents		Total
	Yes	No	
Has the introduction of the portal change the way you teach?	8	1 2	20
Do you see it as a good platform for teaching and learning?	15	5	20
Has the use of the portal improved your teaching methodology?	6	1 4	20
Will you recommend the use of the portal to your other colleagues in other polytechnics in the country?	13	7	20

Source: Field Data

On the part of the administrators, questions were asked whether the portal is a good platform for general administration of the polytechnic. Majority (8) people affirmed it and (2) declined. This means that the administrators know that the portal is a platform that can aid them in their day-to-day work schedules. Also, on the issue of improving their work, (7) people stated that the portal has not improved their work while (3) people affirmed this position and when asked if they will recommend the use of the portal to other colleagues in other polytechnics in the country, majority (9) said "yes" whiles the remaining (1) said "no" . The responses are summarized in Table 3.

Table 3: Contribution of the Portal towards Working

Questions	Number of Respondents		Total
	Yes	No	
Has the introduction of the portal change the way you work?	4	6	10
Do you see it as a good platform for the general administration of the polytechnic?	8	2	10
Has the use of the portal improved your work?	3	7	10
Will you recommend the use of the portal to your other colleagues in other polytechnics in the country?	9	1	10

Source: Field Data

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DISCUSSION

The study was set out to examine how students and lecturers as well as administrators perceive the quality and reliability of the Koforidua Polytechnic's nline educational portal. This study was supported by literature reviewed from various sources such as articles, books, online and information from Koforidua Polytechnic to assess the effectiveness of the portal, to identify its contribution towards teaching, learning and the general administration at Koforidua Polytechnic and to identify the challenges the portal face. In this study, primary data was collected by using questionnaires and interview questions that was administered on the lecturers, administrators and students of the polytechnic who directly use the portal.

The literature review acknowledges both positive and negative aspects of the portal. One of the negative issue is related tothe people adapting to Internet learning. Internet World Stats (2009), revealed that, "The internet is now ubiquitous and with Internet penetration rates ranging between as low as 5.6% in Africa and up to 74.4% in North America". Those even with access to the Internet, have a problem of robust connectivity of the Internet. Reluctance to change is another important factor influencing the acceptance of new technology or innovation such as the portal as the existing mode of teaching and learning as physical classroom adequately serves the needs of students and lecturers.

This study looked at statistics of the responses received to identify whether the portal has been useful to the general polytechnic community. Students and lecturers as well as administrators at large perceive that the quality and reliability of the polytechnic's online educational portal is good. However, there are opinions that the portal can be improved in other to maximize its full capabilities. A good point raised is the fact that online education enables full-time workers to combine working and learning at the same time. The introduction of the Bachelor of Technology (BTEC) degree as a mean to further their education for the higher national diploma (HND) graduates, it has become an important platform since most of the HND graduates are working and can't leave their work and attend lectures during their working times.

The results also indicates that the portal's contributes towards teaching, learning and the general administration at Koforidua Polytechnic, whereby majority of the students said that the portal meet their academic needs. The lecturers also acknowledged the fact that the portal is a platform that can aid their teaching. This is in agreement to Reeves (1998), Ringstaff and Kelly (2002) statement, "Students can learn from computers where technology used essentially as tutors and serves to increase students basic skills and knowledge; and can learn with computers where technology is used as a tool that can be applied to a variety of goals in the learning process and can serve as a resource to help develop higher order thinking, creativity and research skills". Administrators of the polytechnic have been carrying out their day-to-day work interring and retrieving data manually but with a centralized database being provided by the portal, working on the student's record has become easy but it still has not change the way and manner at which they work as supported by Cox and Dale (2001), "Human aspects such as courtesy, friendliness, helpfulness, care, commitment, flexibility and cleanliness cannot be replaced by technology".

On the challenges in the use of the portal, administrators indicated that there are challenges such as low connectivity of Internet access and the non-functionalities of the portal at times. Majority of the lecturers as well as administrators also indicated that the challenges faced are internal issues which can be addressed by the polytechnic.. This is in agreement with Sak, Skalková and Mareš (2007) who was cited by Vaněček et al, (2010), "e-learning is studying by the means of electronic media; be it learning through CD or internet".

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The study also found that some lecturers print and sell their lecture notes, and therefore do not upload their lecture notes for free to the students. This practice makes them reluctant to accept the portal.

Results related to the delivery modes showed that although the polytechnic have made provision for those e-learning delivery modes, students and lecturers are not familiar with them. Benson et al. (2002) and Clark (2002) pointed out, "e-learning not only covers content and instructional methods delivered via CD-ROM, the Internet or an Intranet but also includes audio and videotape, satellite broadcast and interactive TV". Most of these delivery modes are not used. It also appeared that polytechnic management and lecturers have not established a broader e-learning centre facility that would trigger students to adopt the portal.

CONCLUSION

This study reveals that students, who are workers enrolled in the evening and the weekend school programme are the most common users of the portal. Some students consider the portal as a good platform to download lecture notes and submit assignments. The portal enhances their learning, while others face challenges as there are lecturers who do not use the portal. The students indicated that some lecturers prefer to give them printed lecture notes in the class. This study also discovers that while most of lecturers are aware of the platform to aid their teaching and learning, most of them admitted that they are not using it. The reason being that they are not ICT inclined and were not present during the orientation on how to use the portal. Nevertheless, lecturers using the portal strongly recommend the use of the portal to aid teaching. These lecturers also indicated the challenge of low connectivity of the Internet. The third group, the administrators are aware of the existence of the platform and admitted that it was a useful platform for their day-to-day work at the polytechnic. This study observed that generally students, lecturers and administrators found that the portal is a good platform for teaching and learning, and administration at the polytechnic. The portal is underutilized for specific issues which must be addressed to ensure the full benefits of the portal as an aid to teaching and learning and the general administration of the institution.

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