



ELSEVIER



Available online at www.sciencedirect.com

ScienceDirect

Procedia - Social and Behavioral Sciences 191 (2015) 2406 – 2411

Procedia
Social and Behavioral Sciences

WCES 2014

The Growing Of Online Education In Sub Saharan Africa: Case Study Ghana

Selira Kotoua^{a*}, Mustafa Ilkan^a, Hasan Kilic^{b*}

^a School of Computing & Technology, Eastern Mediterranean University, Famagusta, Via Mersin 10, Turkey

^b School of Tourism & Hospitality Management, Eastern Mediterranean University, Famagusta, Via Mersin 10, Turkey

Abstract

Other names of online education are e-learning, cyber schools or distance learning, which are distinct from face to face traditional education because students do not need to visit an actual classroom and listen to an instructor talking to them. Online education is a classroom on the internet that engages and assists students to study in their own free time. It is self-directed learning. The internet has become a major educational technological advancement tool in society and the universities in Ghana, such as the University of Ghana, Kwame Nkrumah University of Science and Technology and Cape Coast University, took advantage of it by offering courses online to target the working class in Ghana. However, the rate of online education in these universities is still very low according to the questionnaire results of the study. Most of the students still prefer face to face classroom teaching to the cyber schools. They have a negative perception about online education, but the use of the internet frequently can lead to changes in views. Online education has a big advantage that the students do not need to resign from their jobs to take courses in the university; they do not need to look for babysitters to look after their children so they can go for classes. Online education has brought easy ways to study and to get a degree to the doorsteps of the working classes and students alike in Ghana through the higher educational institution.

Crown Copyright © 2015 Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Selection and peer-review under responsibility of the Organizing Committee of WCES 2014

Keywords: : E-education, universities in Ghana, students' views

* Selira Kotoua, Tel.: +90-533-8760873

E-mail: selira.kotoua@gmail.com

1. Introduction

Online education in Ghana has grown very little despite the fact that some universities offer cyber schools. In sub Saharan Africa, Ghana is rated as one of the best countries for online education though the process is still in its infancy. In Ghana 5 out of every 10 students have internet and most universities have 24 hour access to the internet. Though people have access to the internet, the online education in Ghanaian universities is still not perfect enough and most students prefer traditional systems to e-education. Statistics shown by UNESCO in (Nairobi, Kenya, 2007; Togoe,2012) indicate that e-learning was improving in Ghana, though for the whole of sub Saharan Africa the program was a huge challenge because of lack of infrastructure facilities such as computers and network in most universities to adopt the online programs successfully. Apart from the technical difficulties, most of the universities are also in crisis and rely on foreign donors even for education, the infrastructure of most schools is in collapse; professors moving abroad for better salaries has affected the online education in sub Saharan Africa. Most professors who could have trained to teach online programs are living abroad and the population numbers of students are growing hugely day by day (Adeyinka, 2013). In Nigeria, for instance, there is online university but no teachers to efficiently teach the courses. There are always strikes by the teachers because of poor salaries and the government does nothing about it. These are the very bad factors that affect not only the online educational systems in sub Saharan Africa but also the traditional face to face system where a teacher comes to the class to give a lecture as part of a course. Corruption in the higher educational institutions is a big problem that needs to be tackled. There are many obstacles confronting the universities in sub Saharan Africa and e-learning offers the best solution to obtain higher quality education. With online education, the working class can take courses to get better degrees for either promotions or better salaries. Online education is very flexible and suitable for students with young children. They do not need to employ babysitters. They have are no transportation issues and there is no waste of money travelling long distances to study. The money that would have been used to buy fuel to travel to a location for a class can be saved. Costs for car parking places are reduced. Internet education has dramatically reduced the cost students would have incurred by travelling to attend classes at distant locations and visiting professors for lectures on special courses. Online education has made life so easy. Most of the higher educational institutions in sub Saharan Africa have started exploring e-learning and adopting the system but still lack resources which makes it difficult for them to use the program to its fullest. Ghana is a sub Saharan African country and most of the difficulties and challenges confronting e-education in the area affect Ghana too but the Ghanaian education service is working hard to make online education a priority and a success in the country. With the help of the Ghana government and the computer companies in the country, the tax on computers and computer parts importation has been waived and now computers can be imported without any tax into the country. The reason for this is to get all Ghanaian universities and tertiary institutions updated with modern computers and internet to facilitate the online educational systems.

2. Literature Survey

The population of Africa as a whole is 1,037,524,058. As a continent of more than one billion people, it has become the world's fastest growing market for mobile communications and the internet in the world. However, the continent still has some of the world's lowest penetration rates in the market sectors. Despite the fact that Africa has a big geographical area, there are still problems with Network and communication issues. In mid-2010 mobile users were about 90% of the population. Though Africans have very low salaries, a system was put in place to target such groups to avoid prices of products being affected by consumer demand in the market. There is growth in the demand for lower unit cost services to provide internet access and networks. There is also high demand for network and internet access in some of Africa's most advanced markets. In view of all these factors sub Saharan Africans think the continent is getting ready to push up online education to the fullest capacity in the near future. At present there are more than 50 wireless operators in Africa and CDMA-2000 has been identified as the correct technology selected to provide wireless access to the continent. This technology is very flexible and Undersea fibre optic cables from US operators were made available to many countries in Africa for the first time between 2009 and 2010. This has created an internet revolution in sub Saharan Africa, most especially in Ghana and Nigeria which have the biggest population growth in the region. These factors contributed immensely to online education that has been lacking in the region for many years. The new sharp increase in internet usage from 2000 to 2011 is a big credit to

online education (Tagoe, 2012; Nkansah, 2001). WiMAX is another popular technology in sub Saharan Africa. It is gaining ground in many economic sectors because of the high data rate it emits and about 100 WiMAX networks are already in operation in Africa.

3. Methodology

E-learning programs in sub Saharan African with reference to higher educational institutions in Ghana were not a great success. Some questionnaires were prepared to investigate the opinion of Ghanaian students and students from other countries in West Africa studying in Ghana about e-learning. The behaviour of students was investigated and how much experience they have in collaborative learning. Though history stated that online education has been in the Ghanaian universities for many years and Ghana has been a partner of the 17 centres in Africa for e-learning, many students still have misconceptions about online education. Some students in Ghana, according to the survey, indicated that online learning is not good enough because there are not sufficient computers and internet on campus and students have not been educated enough about the benefits of the program. They hope that the undersea fibre optic broadband with the help of America to supply internet to most African countries such as Ghana can encourage students to benefit from the program and reduce the illiteracy rate in the country and other parts of the Sub Saharan regions. The Ministry of Education (Nkansah, 2001; Kenya, 2007; Martey, 2014) has already started introducing online education by training colleges, technical schools, private universities and public universities, senior and junior secondary schools. Students can start taking online courses as an alternative to conventional education. There are two methods used for online education.

The synchronous procedure of learning is the immediate communication between the students and the online teacher or online teachers and students coming online at the same time for lectures. Here all the students get access to lectures simultaneously. They have a cyber-classroom using video or audio conferencing and real time chat. The other method is the asynchronous one where students and teacher do not come online at the same time. They come online at different times and study on their own and if the students have a question related to their studies, they send an e-mail to the teacher and wait for the answer. Internet usage in Ghanaian universities and colleges is expected to grow rapidly by 2013 because of the new fibre optic broadband project for Africa and the online courses that are already going on in the private and public educational institutions. Most universities can have modern computers, networks and internet but the students still need some time to get used to computers and the internet before giving online education a chance. At the moment Nigeria is the leading country in sub Saharan Africa with the largest number of internet users according to statistics, (O'Brian, 2012; Alemna, 1999) while Ghana is just behind Nigeria. Corruption and poverty have seriously affected educational facilities in most of the sub Saharan states, forcing many young students to pursue their studies in other countries such as Turkey, Cyprus, the US and the UK. The purpose of the questionnaire was to determine and address the perceptions of Ghanaian students about online and traditional educational systems on their doorsteps, the internet usage in sub Saharan Africa and the percentage of sub Saharan countries that get access to internet which is the backbone of internet education. Without internet, online education is impossible. The answers obtained to the questionnaires in table 1 below indicate that most students in Ghana still feel more positive about the traditional system of education than the online system. Additional time is needed for the perception to change and for students to get more used to the usage of computers in the Ghanaian universities. Students think that computer technology cannot replace the personal relationship between them and their teachers and friends. As time passes and as video conferencing and e-lectures become more common in the area, ideas on their interrelationship with their teachers and friends may change.

Table 1. sample Questions

1	How can the students from Ghana compare face to face classroom learning to e-learning?
2	What does collaborative learning mean to Ghanaian students who are more familiar with the traditional educational system?
3	What are the factors that affect students' performance in the online courses they register for?
4	Is online education for the rich in Ghana?
5	What do University students in Ghana think about online educational system?
6	Should online education be only for students with private internet?

4. The First Online University at Kenyatta

The first online university in Africa was founded in 1996 as a project of the World Bank to improve cyber education in Africa. It was set up in Ethiopia together with six other African countries namely Ghana, Kenya, Uganda and Zimbabwe but the headquarters was in Kenya. The University was operating from the University of Kenyatta by then. The Minister of Finance from Kenya blocked \$194,000 that was given by the World Bank for the development of the University. The money was rejected because of difficult monetary policies by the government at that time. These are some corruption issues that held Africa back for many years. The continent has everything, yet it is the poorest in the world. Africa always depends on Europe and America to make life meaningful. The online university was purposely set up to help improve the quality of education in Africa as a whole. It was meant to target the working class and secondary school leavers who could not go to the University because of lack of places. The initial programs were in science, engineering and business courses but today other courses have been added, including vocational courses. Their modes of teaching were the use of satellite broadcast in the form of videos, MPEG 4 and e-mail interaction between teachers and students.

5. The Importance of Collaborative Learning

When two or more people learn something together, either through the internet educational system or face to face method, we call that collaborative learning. Students from Ghana and sub Saharan African countries therefore need collaborative learning to find out more information learn skills from each other and evaluate each other's notions on the study shared or monitor each other's work. The students can form groups to interact actively based on their learning model by sharing their experience and working together. There are different methodologies and environments in which students or groups of students can learn a task together and where each member of the group can interact with the others in the group by face to face talk or computer online forum, chat, video conference, audio conference and many more methods. In this way they can analyse their communications and discuss where comprehension is not obvious. Collaborative learning originated from Vygotsky's views about the nature of social learning through his own theory entitled Zone of proximal development. According to this theory, collaborative learning has different approaches that include intellectual effort by teachers and students and this can be seen when students are grouped to work together to search for the understanding of a problem, for a solution or to create a product. Collaborative learning also plays a big role in the relationship between teachers and students in the classroom. For collaborative learning to take place in sub Saharan Africa and Ghana as a particular reference the growth of internet in the environment should be a paramount issue (Arthur, 2013).

6. Internet Users in sub Saharan Africa

Statistics indicate that the growth of internet users in West Africa is led by Nigeria with a huge number of users. They have a population of about 155,215,573 and the growth in African internet in general has sharply increased because of the introduction of undersea broadband fibre optics from the US that has improved and increased the number of users of internet in many countries in the sub Saharan African environment. People are assuming that ten years from now online education in sub Saharan African countries is going to grow to a huge level, most especially in Ghana because of the present oil production in the country. The network infrastructure has improved vastly in Ghana and the dial-up system is being replaced at a faster rate. The wireless technology in the country is also growing, with many communication companies involved in internet marketing through mobile phones and

computers. There are many online programs running in some colleges and universities in Ghana. According to (internet world statistics, 2011) the use of internet in Sub Saharan Africa and other countries was labelled as shown in table 2. The total users of internet in Africa is 5.7% with a total population [pop] of 1,037,524,058 while the other countries in the world have a population (pop) of 5,892,531,096 that uses 94.3 % of internet. The total population [pop] of the world is 6,930,055,154 which means Africa has the least number of internet users as compared to the rest of the world. These are some of the reasons why online education in sub Saharan Africa is not too popular because just a few people have access to the internet. The broadest part of Africa just received access to the internet through fibre optic bandwidth from the sea for the first time in 2009-2010. It was the first period Africa had such a huge privilege and the source was from a submarine base. Some parts of Africa already had the fibre optic systems operating but the arrival of this new system will break the monopoly and increase competition in the internet market. The scientists hope with this new technology the sub Saharan African countries can meet their online educational objectives (Colclough, 2000; Fritelli,2012). They hope that e-education can be promoted to many young people that need education to reduce the illiteracy rate to the lowest in the area. Up to 2011 about 41 countries have already been connected to the internet through the fibre optic broadband systems and many are yet to be connected.

Table 2. The use of internet in sub Saharan Africa.

African Region	Population (pop) (2011 Est.)	Pop% of the world	Internet users 2011	Penetration (% pop)	User growth 2000-2011	Users % of the world
Total for Africa	1,037,524,058	15.0%	118,609,620	11.4%	2.26.0%	5.7%
The Rest of the World	5,892,531,096	85.0%	1,976,396,385	33.5%	454.4%	94.3%
World Total	6,930,055,154	100%	2,095,006,005	30.2%	480.4%	100%

7. The Strength and Weakness of Online Education in Ghana

The strengths and weaknesses of online studies in Ghana is a huge issue that the Ghanaian education service is working hard to resolve.

7.1 The strengths

- Students can take online studies on their own. Another name for online education is cyber school, e-education or e-learning
- Online programs allow students to study in their free time. No time is set specifically to study. A student can decide to study at night, in the morning or in the afternoon. It is not like the classroom where the student has to be in the class at a certain time and can only leave at a certain period. The online learning is more flexible.
- The course materials are available online 24 hours a day and a student can get them at any time convenient to him. There are no strict rules as to when a student should go online and study
- There is no pressure from other students and the student can have enough time to think about what to write.
- It is possible to chat and video conference with teachers and ask questions on topics that are not clear
- Students can have classmates from all over the world and work with them
- Students can keep on their jobs and study online at their own pace
- There are no travel expenses involved, just log on and study.

7.2 The weaknesses

- Studies at home can be very hectic. Children, animals, friends coming for a visit, loud music from neighbours can be a potential threat to online studies
- Internet studies need discipline. Students should avoid logging in to their class work while in the workplace. It can distract them from normal working responsibilities
- There is no face to face interaction with classmates, friends or the teacher
- If the computer is faulty and the student has no IT background it can lead to the class being cancelled
- Motivation by the student can play an important role about online studies
- Students have to wait for a long period for feedback from teachers
- There are no personal relations between the teachers and the students
- Students without computer knowledge cannot take online courses

8. Conclusion

Sub Saharan Africa is lagging behind in terms of online education. The traditional system of education is well known. The educationists are hoping that the current IT technology and the international fibre optic bandwidth being introduced will encourage e-education in the higher educational sectors. The educational planners should make it a point to encourage online studies in the senior and junior secondary schools throughout the sub Saharan African region. By so doing, the illiteracy rate in the countries can be reduced and graduates can apply for better jobs. If this is successful, people can contribute meaningfully to the growth of the economy in the various nations in sub Saharan Africa. This can also lead to the development of the area. Education is the only key to success and if people are educated, their potential can be used to the fullest. They can reason and think in the right direction and make significant decisions. Education has a good impact in human life so Ghana should make online education a vision and a priority to educate the youth so the country can continue to grow strong economically.

References

- Adeyinka, A. (2013). Current problems of educational development in Nigeria. *Journal of negro education*, 1-82.
- Alemna, A. A. (1999). The impact of information Technology in Africa. *Sage journals*, vol. 15.
- Arthur, P. O. (2013). Internet Use among Students in Tertiary Institutions in the Sunyani Municipality, Ghana. *Library Philosophy and Practice*, 1.
- Colclough, C. A.-S. (2000). Achieving schooling for all: Budgetary expenditures on education in Sub-Saharan Africa and South Asia. *World Development*, 11.
- Frittelli, .. C. (2012). African Universities: Ready for the Cloud? *The Chronicle of Higher Education*.
- Kenya, N. (2007). Quality Education in Eastern and Western Sub-Saharan Africa. *Poverty Alleviation, hiv and aids Education and Inclusive Education*, UNESCO-IBE; 2010; 978-92-3-204161-6.
- Martey, A. (2014). ICT in Distance Education in Ghana: Distance learning, Higher education, Information technology, Academic libraries. *Library Hi Tech News*, Volume 21, Issue 5, pp. 16 - 18.
- Nkansah, P. T. (2001). Adequacy, accessibility, and goodness of data: A necessary requirement for the effective utilization of information technology in Ghana. *Journal of African Business*, Volume 2, Issue 1, pp. 95 - 107.
- O. Birba, A. D. (2012). Internet adoption in Africa. *Elsevier B.V*, 463–472.
- Rose, R. (2002). African telecoms comes of age. *African Business*, Issue 274, p. 10.
- Stork, C. (2014). BUSINESS models; RESEARCH; BROADBAND communication systems. *Calandro, Enrico; Gamage, Ranmalee*, Vol. 16 Issue 1, p76-93.
- Tagoe, M. (2012). Students' perceptions on incorporating e-learning into teaching and learning at the University of Ghana. *International journal of education and development Information and communication and Technology*, volume 8, issue 1, p 1-91.
- Tonin, M. (2014). ENFORCEMENT, Flat tax, Economics / Management Science,. *World Policy Journal*, Volume 21, Issue 1, pp. 153 - 174.