THE STATUS AND CHALLENGES OF ONLINE DISTANCE EDUCATION PROGRAMS

IN POST-SECONDARY INSTITUTIONS IN GHANA

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The purpose of this study was to identify the status and challenges of online distance education programs in post-secondary institutions in Ghana. This study was a replication of a similar study conducted in Kenya in 2009, at the University of Nairobi and Kenyatta University. This present study was conducted with an online survey using Google survey assessment. The survey requested responses from six post-secondary institutions in Ghana. Out of a total of 450 projected student responses, 309 responses were received with a 69% participation rate. A total of 14 responses were received for instructors out of a projected 30 resulting in 47% participation rate. And for administrators, 8 responses were received out of a projected 12 resulting in a 67% participation rate. Overall the study revealed that Ghana post-secondary institutions have established and incorporated online distance education into their programs, offering both online and blended courses. Some of these institutions established regional centers across the country and incorporated foreign instructors into their programs. The survey also revealed that students were satisfied with the overall online distance education program in their institutions which included the level of instruction, feedback and evaluation. However, there were still challenges revealed from the study that included the high cost of education, frequent power outages, school stoppages as a result of instructor strikes and the need to restructure courses to include projects.

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CHAPTER 1

INTRODUCTION

University education as far back as the 11th century in the Oxford University days,
(Oxford University, 2014), has always played a pivotal role in a society's development,
advancement and socio-economic status. In societies across the world, social status and
advancement have sometimes depended on the university, college or school attended. Thus many
families worked hard to send their children or families to prestigious schools to gain that socio
economic status and to advance in society.

In various countries such as the United States, United Kingdom, Canada, Australia, the
Scandinavian countries and other European and Asian countries, families have had traditions of
going to the same colleges and universities based on experiences and feedback (The Guardian,
2011). The schools have in turn been able to create and nurture these relationships with families
to retain those they already have and be able to attract more students and their families.

These experiences in colleges and universities have become pivotal in the operations and
decisions of colleges and universities to attract talented and diverse students. High school
students have made and continue to make decisions on what colleges and universities they want
to attend based on the perception of experiences they receive. The colleges and universities try to
portray, tailor and market the universities and colleges to what the students will expect. Based on
feedback on experiences they will in turn provide that education to these students on their way to
a career and advancement of society.

As technology has advanced, institutions in developing and developed countries have
followed suit to introduce distance education and incorporate it as an option or part of the
curriculum.

In Ghana however, a country on the west coast of Africa, the educational experience is not the same as described above about the developed countries. Ghana is a developing country and still building its technological infrastructure in all aspects of the society to catch up with the developed world. Thus online distance education is fairly new and still gradually being improved. This made Ghana a unique country to focus on in terms of educational, technological, economic and sociological environment.

What is the current status online distance education programs in tertiary institutions in Ghana in terms of their educational infrastructure, implementation and utilization? What are the challenges in the implementation and utilization of their online distance education by students, instructors and administrators? These are questions this study sought to answer using research and surveys.

Purpose of Study

The purpose of this research was to identify the status and challenges of online distance education programs in post-secondary institutions in Ghana. Post-secondary institutions in Ghana experience numerous problems in the implementation, utilization and delivery of online distance education programs. The goal of this research therefore was to identify these challenges. Ghana is a country that has a high level of education built on the British educational system and produces a highly intelligent and successful number of college graduates and distinguished professors. However, the system still faces various obstacles in their implementation, utilization and delivery of online distance education programs in post-secondary institutions. This research therefore examined various institutions to identify these obstacles to provide pertinent

information that can be used to improve the current state of the online distance education programs and also for further research.

Through literature review and surveys, the research identified the challenges faced in the implementation, utilization and delivery of online distance education programs in post-secondary institutions in Ghana. These identified obstacles provided information which can be utilized to implement various measures to correct and improve the online distance education programs in Ghana. Examining and identifying these challenges provided the necessary information needed that could be used to develop a model framework for online distance education implementation in Ghana and potentially other developing countries.

Problem Statement and Need for Study

The 1990s and the early 2000s were challenging decades for post-secondary institutions in Ghana. Accommodation and facilities were limited in supply in their ability to accommodate the demand of the number qualified applicants that applied for admission to these institutions. About 40% of qualified high school graduates and past graduates were not able to be admitted to these post-secondary institutions, (Ghanaweb, 2000). The President of Ghana at the time, John Agyekum Kufuor, setup an initiative and charged post-secondary institutions to find solutions to the growing limited accommodation problems. The fear was that in the near future Ghana would be short of qualified professionals if a solution is not found quickly.

As a result of the president's education initiative in 2002, (Kwarteng, 2010), which challenged post-secondary institutions to provide solutions to accommodate students not able to be admitted into the traditional school system due to space and accommodation limitations, various schools implemented different types of distance education. These schools however, faced

challenges in the introduction, implementation, delivery, utilization and maintenance of the various distance education programs.

The purpose of this research therefore was to examine/investigate the current status of the online distance education programs in the various post-secondary institutions in Ghana and the challenges they are presently facing.

Ghana is a unique country in its educational, technological and social environment. As a developing country still building technological infrastructure in all aspects of the society to catch up with the developed world, there was the need to explore these areas of the society and how they might contribute to the challenges facing online distance education in the post-secondary institutions in Ghana. In terms of online distance education, this research explored Ghana's current educational, technological, social and economic situation to investigate if they contributed to the challenges in the online distance education programs in the post-secondary institutions.

Researching and knowing these obstacles provided the pertinent information to understand the challenges in this unique Ghana environment. This study will be used as a benchmark to create a framework and build a conceptual model for implementing online distance education programs for unique environments like Ghana. This will aid in the development and improvement of online distance education, technology and computer literacy as a whole in the implemented area.

In the literature review section, this study explored various researches that were conducted. A lot of material was written and researched on various aspects of online distance education and its implementation and delivery in developed countries and different environments. However, there was little material and research done on online distance education

and the challenges they face in their delivery of online distance education in a unique environment like Ghana or other developing countries especially African countries. Even if any researches were done as found in the literature review, they were not broad enough to use to generalize on the overall population area. Thus there was the need to explore this unique area and environment to provide, understand and learn the obstacles in this environment.

This research will contribute to this area of research which can be used not only in Ghana specifically but also Africa and other developing countries. The literature research also explored various research materials written and research done in the area of online distance education in Ghana or Africa or a relatable research in other countries. This provided insight into what information existed in the field and valuable information, materials and experiments that was used to learn and enhance this study. Literature also reviewed other online distance education research and materials to understand the concept of online distance education and any related materials.

This study will be valuable information for researchers, colleges and universities in Ghana and across the world, to the current and prospective students, to the business community and employers and the Ghana society as a whole especially since online distance education is still taking root in Ghana. This developed model framework can then be used as a benchmark for online distance education implementation in developing countries and underdeveloped countries all over the world that suit the same environment. Or the model framework can be modified to suit the intended environment.

The educational institutions in Ghana, the Ghana Government Education Service, the NGOs interested in improving education, the business community, the Ghana community as a whole and the world as a whole will be able to have a unique information on what obstacles

plague a developing country like Ghana and what measures can be used to correct these obstacles. This study will also provide an insight into tools, infrastructure items and information to be aware off when trying to implement an online distance education program in an environment like Ghana. In the meantime, this information will start the conversation in knowing and learning about the challenges being faced. The next step will then be finding ways to resolve these obstacles or ways to improve on the current system.

This study also explored the history of Ghana as a country, the educational history of the country, the current state of technology in the country, the current state of internet technology in the country and the structure of online distance education in various post-secondary institutions in the country Ghana. Knowing this history will provide us with a good foundation for this research.

Scope of Study

Data was collected on the experiences of Ghana students, instructors and administrators about online distance education in Ghana post-secondary institutions and what challenges they faced in their experiences. This data was collected using surveys, general research background and structure of the post-secondary institutions. As many possible post-secondary institutions comprising of colleges and universities in Ghana was planned to be used for data collection to enable the study to be able to use the conclusion to generalize on the country. However, only six total post-secondary institutions were able to be used due to institutional restrictions and unforeseen circumstances. Thus data was collected only for the below post-secondary institutions.

1. The University of Ghana, Legon. http://admission.ug.edu.gh/dl.php

2. The Kwame Nkrumah University of Science and Technology.
   http://idl.knust.edu.gh/about/distance-learning

3. The University of Cape Coast. http://ucc.edu.gh/academics/view/2/department/39

4. University of Education, Winneba http://www.uew.edu.gh/iede

5. University of Professional Studies. http://upsa.edu.gh/pages/academics/distance-learning-school

Research Questions

As stated earlier, Ghana is a unique country in its educational, technological and social environment. As a developing country still building technological infrastructure in all aspects of the society and also to catch up with the developing world, there is the need to explore and identify the status of these online distance education programs in these post-secondary institutions and the challenges they face in their effective implementation, utilization and delivery of these programs.

In doing this research, the questions below were explored to provide information to answer the purpose of the study. These questions included:

1. What is the current status of online distance education programs in post-secondary institutions in Ghana?

2. What is the structure of the online distance education programs in the various post-secondary institutions in Ghana?

3. What are the enrollment rates in the various post-secondary institutions in Ghana?

4. What are the experiences of students, instructors and administrators in online distance education in Ghana post-secondary institutions?

5. What are the challenges in the implementation (administrators), utilization (students) and delivery (instructors) of the online distance education in the various post-secondary institutions in Ghana?

6. Are there social, economic, technological and educational challenges faced in the online distance education programs in post-secondary institutions in Ghana?

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Exploring, researching and finding the answers to these questions provided the pertinent information that this research sought to provide to the communities of interest.

Limitations and Delimitations

There were some limitations going into this research that were presumed to be expected as with any research project or study. For this study the limitations were the below.

- Access to research subjects may be limited due to politics involved in the kind of research and the sensitive nature of information provided.

- Access to personnel, students and administrators may be limited due to conflicts of schedule or availability.

- The colleges and universities may not be willing to release information due to fear of disclosing information that they may not want to be released to the public or government, for example enrollment rates .

- Participants may be unwilling to participate due to fear of retaliation from the college or university.

- Participants may not provide the most accurate information due to fear of retaliation from the post-secondary institution.

- There may not be enough time based on the scope of this study to collect enough information.

- There may need to be further research done based on the responses and data collected.

However, the various schools and individuals contacted for help on the research and data collection assured that adequate subjects were going to be available to provide the necessary information to complete the surveys.

Although survey data was used, literature research was also explored to identify some of the status and challenges faced by these institutions. The surveys therefore confirmed or rejected data and information identified by the literature research. With literature reviewed before the survey, various obstacles were already identified which helped to perform more research to

gather and compile more information, data and questions about areas that the literature may not have been able to provide.

As a born and bred African that grew up in Ghana before moving to the United States, a bias was obstacles that were already known that were plaguing the schools. This however did not affect how the questions were structured since the survey was a replication of a survey that had already been verified and used in a previous similar study in Kenya. As a researcher the biases were well cognizant and identified and care was taken for those biases not to affect the survey data collection, the structure of the questions and the entire process.

Theoretical Framework

The purpose of this research was to identify the status and challenges of online distance education in post-secondary institutions in Ghana. In doing this two theories were employed to support the study.

The first theory is the theory of demand and supply derived from the economic theory on the law of demand and supply (Kirzner, 2000). As discussed earlier (Pg 3), a significant number of students were not able to be admitted to the traditional school system in Ghana post-secondary institutions. In fact in a report issued by the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2012), enrollment rates were as low as 30% due to lack of accommodation.

Moreover, with the British educational system which is built on intellectuals and society's view of education and status, demand has increased but supply has remained either constant, diminished in some areas or have not grown to keep up with the demand. The theory of

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demand and supply is therefore important aspect in the status of the post-secondary institutions

in Ghana and the potential challenges that occur as a result of demand and supply

The second theory employed in the study is Maslow's Hierarchy of Needs (Maslow,

1943) which relates to several motivation theories such as the cognitive evaluation theory (CET-

Deci 1975). Maslow's theory states the need for self-actualization and the need to fulfill ones

dreams (Huitt, 2007).

Maslow's hierarchy of needs theory therefore portrays the underlying theme of Ghana's

social setting dating back to the colonial era of the Three Cs (Christianity, Commerce and

Civilization). This concept relates to the online distance education conditions in the Ghana

environment in the sense that the society has been mentally built to self-actualize thus the influx

of applications for higher education.
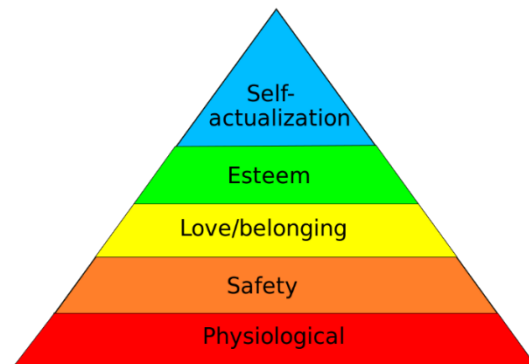
Figure 1. Maslow's hierarchy of needs.

Conceptual Framework

The Status and Challenges of Online Distance Education Programs in Post-Secondary
Institutions in Ghana

The purpose of this research was to identify the status and challenges of online distance

education in post-secondary institutions in Ghana. The conceptual framework illustrates the

various components involved in the status and challenges. In the challenges however, there is the

potential to be other outside impacts other than educational challenges which can be in the form

of political, economic, social and technological.
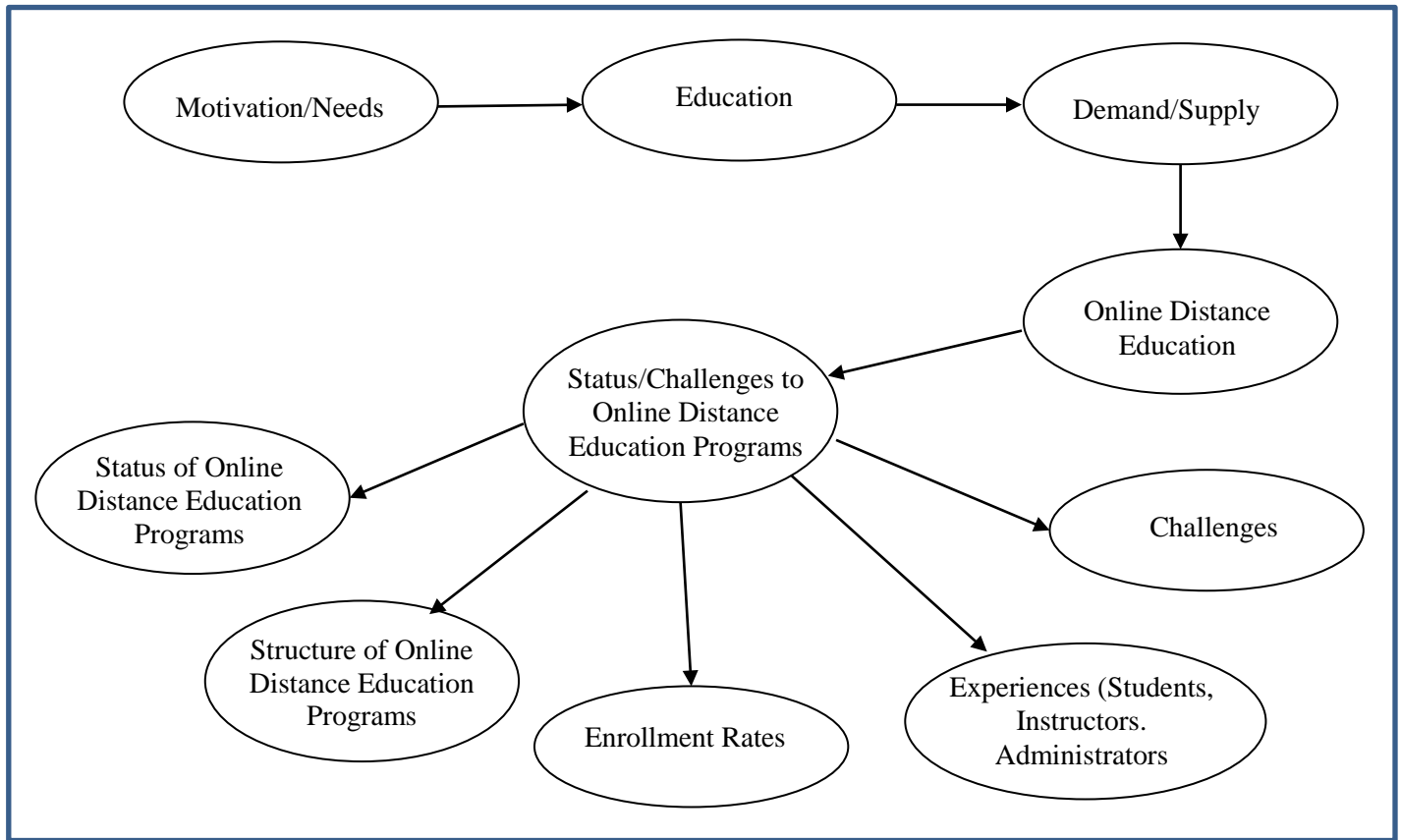
Figure 2. Challenges to online distance education programs in Ghana.

Ghana has undergone a few decades of political turmoil which disrupted the growth of

the country in different aspects of the society. However, the political atmosphere is not the only

factor that affects the implementation and utilization of the online distance education. As far as

Ghana is concerned, the political turmoil was the foundation for the disruption of the country.

After independence in 1957 and the subsequent democratic election of Dr Kwame Nkrumah, (the

first president of Ghana), the country disintegrated into political turmoil when the president was

overthrown while attending a summit out of the country.

From 1966, the country disintegrated into political upheaval from one military coup to

the other until 1992 when a democratically elected government was established, (Ghanaweb,

2014). The political turmoil led to destruction of various infrastructure such as roads, power lines, telecommunication lines, transportation which in turn had a spiral effect on various aspects of the society. This affected various aspects of society ranging from technology growth, educational and scientific growth, economic growth, infrastructure growth and most importantly human growth. However the country has been politically stable since 1992 and infrastructure has been rebuilt and continues to be improved. The study explored the infrastructure of the various post-secondary institutions to identify their status and challenges that affect online distance education.

Social factors play an important role in society's success. Social factors in online distance education are no different and it is important to note and understand what social factors contribute negatively to the implementation and utilization of distance education. One of the important factors that has been constantly mentioned has been the brain drain on the country. Because of the political turmoil, many residents either left the country in search of greener pastures or were forced to flee from being assassinated or imprisoned. Many families sent their children abroad for better education, environment and lifestyle. This created a vacuum in the country where most of the brilliant minds were plying their successful trades in other countries, (Kigotho, 2013).

The mindset and attitude of the people towards education and distance education as a whole has also been mentioned as detractors of the successful implementation and utilization of distance learning. Did these social factors hinder the implementation and utilization of distance education in Ghana? We will examine that in the literature review as well.

Economic factors play an important role in the successful implementation and utilization of online distance education. As Ghana is considered a third world country with a per capita

income of $766 as of 2013, (The World Bank, 2013), could this play a role in the implementation and utilization of the online distance education program in Ghana? What about educational affordability? Again we examined literature to determine if economic factors affect the successful implementation and utilization of distance education in Ghana.

Lastly, the literature review was used to examine the educational factors that affected the successful implementation and utilization of distance education in Ghana. What educational factors affected the successful implementation and utilization of distance education programs in Ghana? Did these schools have the necessary and available infrastructure to successfully implement distance education? How accessible was it to the students? Did the students have the necessary tools to participate in online distance education? What about the institution programs? Were they being implemented successfully? These questions as well as other factors are what this research sought to answer to understand what the various challenges that these institutions face in online distance education programs.

Background of Ghana

Ghana is located on the west coast of the continent of Africa with an approximate population of about 25 million (UNDP in Ghana, 2014). Bordered on the east by Togo, on the west by Burkina Faso, on the north by Ivory Coast and the south by the warm Gulf of Guinea Sea, Ghana's history dates back to the 4th century during the old Ghana Empire. In 1240 AD, the Ghana Empire was conquered by Sundiata and annexed into the Mali Empire. Some of the inhabitants in the northern region of Ghana can still trace their roots back to the old Mali Empire, (Kingdom of Ghana, 2014).

After the Mali Empire, Ghana became the Gold Coast in the 15th century. This is the start of the European exploration age when Portuguese explorers docked on the shores of Ghana and found so much gold that they named it Mina meaning mine. Later, other explorers like the Dutch, the Swedes and the English came to settle on the land to trade in gold, silver, ivory, salt and many other minerals. This age developed into the slave trade and by the end of the 19th century the British took control of the colony and named it the Gold Coast (Ghanaweb.com, 2014).

The British brought with them what is known as the three Cs, Commerce, Christianity and Civilization (David, 2011). In this undertaking they sought to trade with the local people of the Gold Coast, educate them and open their eyes to what they knew as civilization and also introduce them to Christianity. In an effort to educate the local people, they sent some of them to the United Kingdom to pursue university degrees. Soon a crop of intellectuals emerged in the Gold Coast that realized they were under colonial rule and considered it a form of oppression. Their local culture was being erased and in its place being taken over by the British culture. They therefore wanted autonomy and to rule their own land and preserve their local culture.

With a lot of advocacy, struggle and negotiation, the Gold Coast secured independence from under British rule in 1957 and renamed the country Ghana as it was in the olden days. Their first president was Dr Kwame Nkrumah, one of the graduates under the British rule and education, (Ghanaweb.com, 2014). Political struggle plagued Ghana from 1966 with military coups and contentious takeovers through 1992 when a democratically elected president, President Jerry John Rawlings was elected president. The political climate has been stable ever since the 1992 democratic elections with several other presidential elections since then, (Ghanaweb.com, 2014).

The Ghana Educational System

      The Ghana educational system was created by the British Empire during the colonial era. After Ghana gained independence in 1957, this British system of education was adopted and assimilated into the Ghana system. The Ghana educational system is a very structured educational system in line with the British educational system. The structured system, (Education System in the UK, 2014) included: kindergarten (up to age 6), primary school (Class 1 to Class 6) – 6 years, secondary school (Form 1 to Form 5) – 5 years, sixth form – 2 years and university education. Since the Ghana educational system was so structured, it did not offer any flexibility for students to experience other educational systems through study abroad programs and exchange programs. Students and parents were not exposed to other educational systems to explore and compare (International Organization for Migration, 2014).

      Moreover, the educational systems of the countries around Ghana such as Togo, Benin, Cote d'Ivoire, Burkina Faso, Sierra Leone, Nigeria, and Liberia just to name a few have similar educational systems. If the educational system was not similar to Ghana's educational system then Ghana's educational system was better structured and superior to these other educational systems, (USAID, 2013). Thus there was not a lot of educational system differences to compare.

      The past few decades however, a significant number of Ghana students and instructors have been able to travel abroad through exchange programs or enrichment and sponsorship programs. This enabled the students and instructors to experience other university and educational programs. Various families have also been able to send their children to study in schools abroad. This has enabled students, instructors and administrators to experience various types of education, broaden their scope in education, technology and culture.

One of the important lessons learned through these experiences is online distance education. With the growing concerns of numerous qualified students not able to be admitted into the universities due to limited on campus accommodation, various proposals and recommendations championed by various institutions to the Ghana Education Service were proposed. However with no solutions being found to the accommodation problem and the growing outcry of the public, the President of Ghana took it upon himself to introduce what is known as the President's education initiative in 2002, (Kwarteng, 2010).

In this initiative, the President challenged all tertiary institutions to provide access to education to all qualified students. No qualified student should be denied access to tertiary education due to campus accommodation limitations. These institutions therefore embarked on the initiative to introduce and implement online distance education programs to accommodate students that were not able to secure admission to the regular campus education due to accommodation and space limitations. With distance education, these students will experience the same level of education provided to their fellow students on campus. With support from the government of Ghana and other Non-Governmental Organizations (NGOs), various tertiary institutions in Ghana sought to implement and provide online distance education to some of their students.

History of Technology in Ghana

Due to British colonialism, Ghana benefited from technology infrastructure developed by the British during colonial rule. For example, during the colonial era and after independence, road, air, rail network radio and telegraph lines were built and developed for communication and travel throughout the country to explore and move goods, services and personnel throughout the

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country (Country Perspectives. Ghana, 2014). This foundation paved the way for future development of the landline phone system in the early 1980s and the introduction of what is locally called secretarial services. These secretarial services included services such as faxing, photocopying, typing and other basic technology activities. At first most of the services were owned by the government. It was not until 1992 when Ghana became a democracy that the newly created parliament voted to diversify various businesses segments and other private services were able to be created (Country Perspectives. Ghana, 2014). This foundation paved the way for the introduction and adaption of internet technology and mobile communication in the 1990s.

Internet Technology Growth and Current State of Technology in Ghana

In 1992, Ghana became the first sub-Saharan country to receive mobile technology as a further development of the landline system. As mobile technology and cell phones became popular in the developed world and the subsequent saturation of the landline system in Ghana, the Ghana Telecommunication Service sought to resolve the landline congestion problem in the country. It made available spectrums to private companies to develop and introduce cell phone usage in the country. Since then, mobile technology has grown rapidly in Ghana. In the 2013 International Telecommunications Union (ITU) report, Ghana was ranked the highest country in Africa in mobile technology penetration. Currently there are about six mobile companies competing for the services of customers and businesses in Ghana, (Ghanaweb.com, 2014). In 2014, mobile subscribers were up to 14 million and growing with most of these subscribers also subscribing to mobile internet.

Current State of Internet Technology in Ghana

Internet technology followed the same trend as mobile technology. In 1994, Ghana was one of the first countries in Africa to connect to the Internet. Internet technology has however grown moderately compared to the mobile technology. Ghana is a developing country with a low per capita income of $766, (The World Bank, 2013). Thus many households are not able to afford internet access as compared to the developed world. This has contributed to the slow growth of household internet access.

Internet cafes have however grown rapidly over the years. In 2000, Ghana did not have any internet cafes for local usage. By 2002 however, there were about 600 internet cafes in Accra, the capital city of Ghana and trickling down to other parts of the country. Currently internet cafes abound on every corner street in the big towns and cities in Ghana and growing into the rural areas.

It is currently difficult to pinpoint how many internet cafes exist now in Ghana. In 2009 internet users reached 1.3 million with more than double that amount in 2012 at 4.2 million users. In 2001, there were 12 internet service providers in Ghana rising to 165 in 2012 and growing. It is estimated that internet cafes and mobile internet will continue to grow rapidly and continue to be the backbone of the internet access community, (Ghanaweb.com, 2014).

Status of Online Education in Ghana Post-Secondary Institutions

The idea and practice of distance education and learning is not new to Ghana. Distance learning was more known as correspondence learning decades ago where professionals received course materials in the mail, responded to these materials and returned them in the mail. These correspondence learnings were mostly correspondence between Ghana and other countries

abroad. With the development and growth of mobile and internet technology in Ghana coupled with the alarming rate of low admissions to colleges and universities in Ghana due to lack of accommodation resources, it was pertinent that the colleges and universities found other ways to provide access to qualified students. Distance education was therefore the most obvious choice to accommodate more students.

With the backing of the Ghana government and the President's Education Initiative, many institutions sought to build and implement some form of distance or online distance education. The deficiency of internet technology growth in the country has affected the level of online distance education in the colleges and universities. Thus various institutions have tried to implement and offer some form of distance education to their students. However, various institutions are at different levels of implementation of distance education. The next few pages explore the various universities and their internet and distance education structure.

The University of Ghana, Legon. http://admission.ug.edu.gh/dl.php

The University of Ghana, located in the Legon region of the capital city in Accra is the oldest university in Ghana. It was established in 1948 as the University of Gold Coast and later named the University of Ghana, Legon. As a research institute, the university comprises of four colleges spanning three campuses and enrolls about 29,000 students including undergraduate, graduate and international students, (University of Ghana, 2014).

In terms of technology, the University maintains a Local Area Network (LAN) spanning the entire four campuses. The LAN hosts the university website, internet and intranet access, email, computer labs, a library catalog housing a variety of books, articles, periodicals and many other educational materials. The LAN also hosts student registration, student records as well as

the eLearning system which is the university's online distance learning program, (Omollo, 2011). The LAN also hosts the Learning Management System of the university called KEWL.

Even though the University has a Local Area Network, an eLearning system and a Learning Management System, maintenance is not quite adequate due to frequent power outages. Backup generators have been provided in several buildings to help stabilize and substitute for power outages, (Omollo, 2011).

The University of Ghana therefore provides the literal distance correspondent education through the Institute of Continuing and Distance Education (ICDE), (University of Ghana - Institute of Continuing and Distance Education (ICDE), 2014). The ICDE distributes reading materials (hard copies) to the distance learning students. These students read these materials and then meet at 10 regional centers to attend classes. (Omollo, 2011). Plans have been underway to improve the online distance education program to provide online distance education classes.

Recently, the technology infrastructure has been improved where students can access course materials from the online learning management system, instructors to schedule course tests and provide feedback to course participants. However, not all departments and courses provide this capability. There is therefore room for improvement. Lack of technology interest and use by instructors is also a major drawback of the online education implementation at the university.

The Kwame Nkrumah University of Science and Technology.
http://idl.knust.edu.gh/about/distance-learning

The Kwame Nkrumah University of Science and Technology (KNUST) distance education, models close to that of the University of Ghana. The KNUST, established in 1952, is the second oldest university in Ghana after the University of Ghana but currently the number one

university in the country and the center of science and technology in Ghana, (KNUST, 2014).

Situated in the city of Kumasi which is known as the cultural center of Ghana, the KNUST

boasts a population of about 30,000 students. The university seeks to produce top graduates for

the country without compromising the standard of education.

The KNUST therefore established the Institute of Distance Learning (IDL) in response to

the President's education initiative, (Kwarteng, 2010). This institute provided distance learning

to its students who may not be able to be admitted to the regular campus university. The institute

provided the same level of education as the regular campus program. The IDL comprised two

departments, the Centre for Distance and Continuing Education (CDCE) and the Kumasi Virtual

Centre for Information Technology (KVCIT).

As with the University of Ghana, the two departments operate regional centers across the

country where students meet to discuss course materials and collaborate. Some of these cities

include Accra, Kumasi, Cape Coast, Takoradi, Ho, Koforidua, Sunyani, Tamale, Tarkwa, Wa

Bolgatanga, Obuasi and Techiman which are spread all around the country. According to the

university, the center provides learning support for students living in different parts of the

country which reduces travel costs but does not affecting the level of education, (KNUST IDL,

2014). The IDL is a bit of a step higher than the University of Ghana in that they disseminate

reading materials and resources through multimedia instead of paper based.

In terms of technology, the KNUST boasts a fiber optic network with a Network

Operating Center (NOC) that administers the network that is housed within the University

Information Technology Services (UITS). The university also operates a Very Small Aperture

Terminal, (VSAT), as a backup to the NOC, (KNUST, 2014). Students can connect to the

university's Wi-Fi almost throughout the whole campus or can use the computer labs throughout the campus.

For the IDL students, there is a Moodle learning management system that the university uses to conduct the online distance learning program. Even though this learning management system is available few instructors use it. The university also maintains a repository called KNUST Space where various conference materials, papers and other items are housed and can be accessed. As with the University of Ghana system, the KNUST also experiences frequent power outages. However the NOC and labs have generators as backup which can power the centers for a while.

The University of Cape Coast. http://ucc.edu.gh/academics/view/2/department/39

The University of Cape Coast (UCC) is the third oldest university in Ghana established in 1962. As one of the rare sea front universities in the world, the UCC is located in the central coastal region of Ghana in the city of Cape Coast with about 26,000 students in total enrollment, (UCC, 2014).

In terms of technology, the university has a computer network center and a Wi-Fi network that can be accessed by all students on campus. (UCC, 2014). As with the KNUST, the UCC also uses a Moodle learning management system to conduct its distance education providing access to resources and course materials online for student access. However the university also operates sites in seven regional centers for their distance learning.

University of Education, Winneba http://www.uew.edu.gh/iede

The University of Education, Winneba, (UEW), established in 1992, is an education

based university in the city of Winneba operating out of four campuses with total enrollment of about 45,000 students. The university was an amalgamation of a number of teacher training colleges upgraded to the university status. The purpose of this university is mainly to produce academic teachers and educational administrators for the Ghanaian institutions.

In terms of Internet infrastructure, the UEW has a fiber optic network with a LAN and wireless access installed throughout all campuses with computer labs for students as well. The University also uses the Moodle learning management system to conduct its online education.

The distance education department operates out of the Institute for Educational Development and Extension, (IEDE). It also operates one of the largest distance education programs in the country with over 24 centers throughout the country where students meet for tutorials, discussion and class sessions.

University of Professional Studies. http://upsa.edu.gh/pages/academics/distance-learning-school

The University of Professional Studies (UPS), located in the capital city of Ghana, Accra is one of the unique universities in Ghana for professional studies. It was established in 1965 as a professional business studies school for business and accounting certificates. It has served the professional business environment since then until 2008 when it became a full-fledged university offering university degrees instead of certificates. The university has current total enrollment of about 10,000 students, (University of Professional Studies, 2014).

The University of Professional Studies is one of the few universities in the country that is trying to use the blended distance education approach for its distance education. The university uses the Moodle learning management system to conduct the online education and has enhanced it further in the last two years. With the enhancement, students are able to access resources and

materials through Moodle, meet online or in class based on the class structure and hold discussions online. The university piloted this blended education system during the 2014-2015 academic year and is continuing to enhance it further based on the pilot and feedback from students and instructors (University of Professional Studies, 2014).

In terms of technology, the university maintains a robust data center that hosts the school's email system, LAN, internet and intranet and Wi-Fi access to students on campus and computer labs. The university plans to enhance the data center to enable uninterrupted power supply as it faces the same power outage problem experienced by all the universities.

Central University College. http://central.edu.gh/index.php/academics/distance-learning.html

The Central University College (CUC) also located in the capital city Accra is a religious based institution that emerged from the International Central Gospel Church. Their original aim was to create a Christian based institution to produce theological professionals. The school was first known as the Central Bible School and later became the Central Christian College. With its rapid growth however, it was expanded and developed into a liberal arts university college system and named Central University College in 1997, (Central University College, 2014).

The Central University College also in response to the president's initiative, (Kwarteng, 2010), established the Centre for Open and Distance Education (CODE), to offer distance education to some of its students. CUC is still establishing the distance education system and there is not enough information about their progress at the time of this research. To support the distance learning program, the university has a LAN with wireless access for all students on campus and computer labs.

Valley View University. http://www.vvu.edu.gh/index.php/distance-learning#.VA9x3fldW8w

The Valley View University is similar to Central University in that it is also a religious college. The university was established in 1979 by the West African Union Mission of Seventh-Day Adventists currently known as the Ghana Union Congress. It operates out of three campuses spread within the southern and central parts of Ghana. Their aim as with Central University was to educate and produce theological graduates and students that were interested in religious studies. Valley View University received its accreditation in 1997 and became a full-fledged university.

The Valley View University offers an online educational system as well as the blended educational system through the Center for Adult and Distance Learning. Students are free to choose which system will suit their lifestyle and learning. With the blended education, the university offers regional centers where students can receive face-to-face instruction, discussion or just face-to-face meeting with instructors, (Valley View University, 2014).

CHAPTER 2

LITERATURE REVIEW: ONLINE DISTANCE EDUCATION

There has been a lot of material written and research done in the area of online distance education and its implementation in developed countries in various aspects and environment. However, there is not extensive material written and research done on the status and challenges of online distance education programs in post-secondary institutions or factors affecting the effective implementation and utilization of online distance education programs in developing countries especially African countries and Ghana specifically, (Gulati, 2008). Even if any research has been done, they were not broad enough to use to generalize on the overall population area.

This research therefore will contribute to this area of research which can be used not only in Ghana specifically but also Africa and other developing countries. This literature research explored various materials written and research done in the area of online distance education in Ghana and Africa. This research also explored relatable research and material written in the area of online distance education. This provided insight into what information existed in the field and what valuable information, materials and experiments can be learned from and used to enhance this study. Literature was also reviewed on online distance education to understand the concept of online distance education and any related conceptual frameworks.

When we talk about online distance education, there is a broad spectrum of what can be termed as online distance education. Various terms include virtual education, Internet based education, web based education, computer based education and various other synonymous terms. Desmond Keegan (Keegan, 1986), one of the first definitions of distance education, defines distance education in his *Foundations of Distance Education* book as:

- Separation of teachers and learners which distinguishes it from face-to-face education

- Influence of an educational organization which distinguishes it from self-study and private tutoring

- Use of a computer network to present or distribute some educational content

- Provision of two-way communication via a computer network so that students may benefit from communication with each other, teachers, and staff.

The *US News and World Report Education* (US News and World Report, 2014), provides

the following about online education:

- Distance Education: Credit-granting education or training courses delivered to remote (off-campus) location(s) via audio, video, or computer technologies, such as the Internet. Includes both synchronous and asynchronous instruction. May include a small amount of on-campus course or lab work, on-campus exams, or occasional campus visits. Courses conducted exclusively on campus are not included in this definition. Courses conducted exclusively via written correspondence are also not included. Distance education does not include courses for which the instructor travels to a remote site to deliver instruction in person.

- E-learning (electronic learning): Term covering a wide set of applications and processes, such as Web-based learning, computer-based learning, virtual classrooms, and digital collaboration. It includes the delivery of content via Internet, intranet/extranet (LAN/WAN), audio- and videotape, satellite broadcast, interactive TV, CD-ROM, and more.

- Online Education: Credit-granting courses or education training delivered primarily via the Internet to students at remote locations, including their homes. Online courses may be delivered synchronously or asynchronously. An online course may include a requirement that students and teachers meet once or periodically in a physical setting for lectures, labs, or exams, so long as the time spent in the physical setting does not exceed 25 percent of the total course time.

The Institute for Education Sciences, part of the United States (US) Department of

Education defines distance education as:

Education that uses one or more technologies to deliver instruction to students who are separated from the instructor and to support regular and substantive interaction between the students and the instructor synchronously or asynchronously. Technologies used for instruction may include the following: Internet; one-way and two-way transmissions through open broadcasts, closed circuit, cable, microwave, broadband lines, fiber optics, satellite or wireless communication devices; audio conferencing; and video cassette,

DVDs, and CD-ROMs, if the cassette, DVDs, and CD-ROMs are used in a course in conjunction with the technologies listed above.

The Michigan Department of Education defines online distance learning as "A structured learning activity that utilizes technology with intranet/internet-based tools and resources as the delivery method for instruction, research, assessment, and communication", (Michigan Department of Education, 2014).

In this context therefore we defined online distance education as an exclusive synchronous implementation of distance education through the internet with the student on the receiving end and the instructor on the delivery end with a learning management system in between them. Equipment used could be a variety of personal desktop computers, laptops, tablets and even mobile phones. Any number of equipment that the student is able to use to access the learning management system, online materials and resources and be able to submit assignments should be acceptable.

Figure 3. Online distance education model.

As stated earlier, there has not been much material written or research done on the status and challenges of online distance education programs in post-secondary institutions or factors affecting the effective implementation and utilization of online distance education programs in developing countries especially African countries and Ghana specifically.

Professor Nyameko Barney Pityana, a renowned South African and educationist, in his presentation indicated that education in Africa was on the upsurge (Pityana, 2004). However,

there were a number of obstacles hindering the progress of distance education. Political unrest was on top of the list. Africa on the whole has endured rampant political turmoil since independence from the 1960s. Ghana experienced political turmoil from the 1960s through to 1992 when democracy was established, (Ghanaweb, 2014). The political turmoil affected various aspects of society ranging from technology growth, educational and scientific growth, economic growth, infrastructure growth and most importantly human growth.

The political turmoil led to the various destruction of infrastructure and human life, leading to school closings, limited infrastructure leading to limited resources. By resources one of the losses African countries have suffered is the brain drain as it is termed. Essentially because of the political and economic environment, many professionals sought better opportunities and environment abroad. This resulted in the exodus of a lot of Africa's distinguished and promising talents to other continents, (Ghanaweb, 2014).

Dr Pityana's address also indicated the economic limitations in African countries. With political turmoil, conditions were not stable for economic growth. Thus Africans with their low per capita income were not able to afford basic life essentials compared to developed countries. For example, in Ghana, the per capita income as of 2013 was $766. (World Bank, 2013). With this per capita income, most of the populace were not able to afford dedicated internet service in order to pursue online distance education.

However, Dr Pityana had hope that with democracy engulfing Africa and with political stability, should result in economic growth and subsequently infrastructure growth resulting in educational and human growth.

Darkwa and Mazibuko (2000 presented a unique case of the prospect of distance education in Africa. The paper also presented a glimpse of the current environment where even

though most higher education institutions offer distance education, the form of delivery has been mostly correspondence through print material and mail, public television programs, audio and video. With technological advancement, the paper believed that virtual distance education could be implemented through the internet and satellite based technologies.

The paper however discussed the obstacles preventing the successful implementation and utilization of these programs. Infrastructure remained the biggest obstacle and even most notable was outside the major cities. Telecommunication and internet networks did not expand widely beyond major cities where most people can connect to the internet and utilize distance education tools and materials and participate in class interactions.

Moreover the affordability of distance education for the average person was challenging. Even if these students had access to the infrastructure, they were not able to afford it. They will have to pay for a computer or gain access to a computer, be able to afford utilizing the internet, acquire various application softwares to use in their daily work assignments such word, excel etc. These programs were not affordable to the average person.

Even if the facilities were available, accessible and affordable, there was a lack of well-trained faculty and staff to utilize, guide and train students in these programs. This posed a huge challenge since distance education programs could not be implemented without well trained faculty and staff that can teach these classes effectively and also maintain the implementation of these programs.

The lack of political support, limited budgets, the lack of recognition of distance education graduates by the public sector and the lack of a well-defined distance education framework were other challenges the paper discusses.

Ohene and Essuman (2014) present an exploratory study conducted at the University of

Education, Winneba. The study sampled 300 students and nine student leaders to determine what challenges they faced in their distance education programs. The survey revealed that institutional support was lacking in some areas. Study materials to students were being received late and each student was required to make copies of these materials for study which was tedious to do as well as cost a significant amount of money which not all students could afford. Cost structure was therefore another challenge to the students.

As discussed before, Ghana has a low per capita income compared to the developed countries thus most students could not afford all aspects of tertiary education. Most critically, the survey revealed that the academic atmosphere was not conducive for online distance education learning. Most notably was counseling support lacking for students and the technological challenges faced by both the instructor and the students? Since some students and instructors did not have readily access to the internet or even if they had access the poor network was challenging to communicate. Thus students had to travel to the support centers to meet with instructors or counselors which were an inconvenience for an online distance education program.

Moreover traveling to these centers was a challenge since some of the infrastructure, roads etc was not always ideal to travel especially in the rainy seasons where roads could be flooded and cut off from different cities for weeks or months.

Ohene and Essuman's study provided an insight into some of the challenges distance education students faced at the University of Winneba. Per the study, even though the study was on a smaller scale, some students in other universities could identify with these challenges.

A similar perception was voiced in an article by the *Daily Graphic*, (Graphic.com, 2013), one of the oldest and popular newspapers in Ghana. Students involved in the distance learning program at the University of Ghana, Legon, according to the newspaper, "expressed disgust and

disappointment at the university because of its inability to award the students their degrees despite completing their academic work." The students claim they were not satisfied with the level of service provided during the online education which was during the 2007-2008 academic year.

According to the newspaper more than half of the students were not able to graduate in spite of completing their coursework. Moreover, some of the students who graduated in various other years even as early as 2011-2012 academic year did not receive their graduation certificates. In fact there was no graduation ceremony held for them even though the regular student graduation ceremony was held. Thus it was frustrating for the online distance education students at the University of Ghana, Legon according to the newspaper reports.

Anyona (2009) provided a different perspective and environment from Ghana. The study was conducted at the University of Nairobi and Kenyatta University with 702 online distance education student respondents, 278 lecturers, two interviews and document analysis. The study revealed similar challenges as the previous studies conducted in Ghana. These included delays in the production and receipt of students' study materials, lack of funding and support from the government, the availability of trained and experienced online distance education instructors and of course infrastructure. The study revealed that due to these inadequacies, the distance education programs in these schools were overwhelmed and therefore provided inadequate education for its students.

Our present study sought to focus on Ghana; however with Anyona (2009), we realize that the challenges of online distance education expanded beyond the shores of Ghana and throughout Africa and the world as a whole in developing and under developed countries.

Tagoe and Abakah (2014), explored a different dimension in their study. They conducted a survey of 400 students from a total population of the 9300 students of the distance learning program at the University of Ghana, Legon. They present a unique research exploring students' readiness in mobile learning. The research utilized the theory of planned behavior in an attempt to explain how students' beliefs influenced their intention to adopt mobile leaning. The study surveyed about 400 students at the University of Ghana Distance Education through questionnaires in an attempt to find out their mobile learning readiness and their ability to adopt mobile learning based on their perceived planned behavior.

The study was conducted because mobile technology was becoming increasingly more accessible to the local community and populace than any other technology in Ghana. In our earlier discussion of internet technology, we stated how mobile technology was rapidly growing in Ghana and how Ghana had the highest level of mobile technology penetration in Africa. This meant that most of the population was familiar with mobile technology and there was rapid adoption of the technology amongst the populace. This meant that this technology would be readily available and accessible to students to use in their education. However the perception remained whether this concept was feasible or not.

This is what the study sought to explore based on the theory of planned behavior. The survey used a survey questionnaire to collect their data based on a modified version of Cheon et al (2012) questionnaire. A stratified sampling method was used to identify the 400 students to be surveyed and the IBM Statistical software SPSS was used to analyze the data.

Overall the research found out that of the 400 students of the University of Ghana distance education program surveyed, the 79% who were younger students were more likely to adopt the mobile learning as compared to the 17% middle aged and 4% older students even

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though 98% of the 400 students had mobile equipment. This was seen as a result of the rapid mobile technology growth in Ghana the last few years as discussed in the mobile technology section in Ghana. Moreover, these younger students were growing up with technology as part of their lives as compared to adopting it like the middle aged and older students.

Thus in the Tagoe and Abakah (2014), survey, the younger students indicated that it was easier for them to access course materials electronically or the materials provided to them electronically compared to traditional classroom paper materials or waiting for course materials to be sent to them or to be picked up at a location. However, some of the responses indicated the limitation of materials electronically available for the courses. Thus even though the younger students had the potential to access materials electronically, the materials were not electronically available. Again we saw some of the challenges faced with the implementation and utilization of the online distance education programs.

The research by Tagoe and Abakah (2014), however, is very limited in scope. Out of the thousands of online students enrolled at the University of Ghana, only 400 of them were surveyed. Plus the research was only limited to the University of Ghana distance education students. Thus it was hard to use this research as a basis to generalize about all the students in Ghana. This study therefore cannot be used to generalize for all students in Ghana. It could however, be used as a basis for further research to expand the survey to other universities in Ghana with online distance education programs to see what outcomes could be revealed. One thing the survey reveals however was that mobile learning could be the key to Ghana's online distance education programs given the results of this survey and the mobile technology trend and penetration rate in Ghana and the challenges being faced.

Collins (2005) conducted a study on the perceptions of students towards the use of distance learning. This study was limited to the master of business program at the KNUST and even though this was a limited study with a small group in one department at the university, there were 691 participants. In general the study found out that the participants' perceptions were favorable to distance education. Materials and resources delivered were explanatory, instructors were knowledgeable and helpful and the program was well organized. However, the participants relayed their concerns in the timing and delivery of materials and resources and prompt feedback from instructors.

Again with such limited scope and population, it was hard to use such research to generalize for most universities in Ghana. Also this research was based on the setup at the time in 2005 with materials sent to students and meetings and sessions conducted in regional centers. The survey questions were also based on questionnaire developed by the researcher thus there was not a validated survey instrument for the research which meant the research could not be used to be a valid research.

However the research provided a poll on the status and challenges, perception and environment of the distance education at least in the KNUST within the business department which could not be ignored based on this current study. More information and valid research was needed to have a valid concise conclusive research which this our current research was hoping to provide.

A similar study (Asunka, 2008) provided an insight into a different set of the population and challenges. The qualitative study was done with undergraduate students who were enrolled in an online course during the 2006-2007 academic year at the Regent University College of

Science and Technology in Ghana. Data collected included surveys, student and instructor journal entries, email records, individual interviews, and Web-server logs.

As compared to Collins (2005), research, both research ideas were quite similar except for the participants. Collins 2005, surveyed masters level business students while Asunka (2008), surveyed undergraduate students. Obviously their attitudes would be deemed to be different as the surveys were collecting data from different groups of participants, professionals in business studies versus undergraduate students. The population was also quite dramatically different. Asunka 2008 surveyed 26 students compared to 691 for Collins.

The results for the Asunka (2008), study showed that most of the participants were not in favor of the online distance education program. However there were a few interesting views that peaked interest. Some of the responses showed that the students were not used to the online education format and would prefer the face-to-face interaction with the instructor. This confirmed the social attitude of society towards online distance education and certifications. This is why they rated the course unfavorably.

Some responses also showed that the students did not understand the course description. Now it is not clear whether the student did not understand the course description or the course description was not clear. This will be a situation where the researcher could go back and explore more into the survey or seek more clarification from the respondents in order to collect more in-depth information to review the survey or redo the research. This could provide better information on how to improve on the online course in the future. However this study emphasized the sociological challenges facing online distance education in Ghana in terms of perception towards online distance education.

The sentiment at the various universities explored so far on the smaller scale in the various researches produced a trend of the online distance education not favorable to participants. However, more in depth information was needed to make that assumption and that is what this research sought to find.

A different type of perception study, Probing the Validity of Misconceptions about Open and Distance Learning in Nigeria: A Three- Phase Empirical Approach by Dr Kester Osegha Ojokheta, (Ojokheta, 2011), a senior lecturer at the Department of Adult Education was conducted at the University of Ibadan in Nigeria. In this study, the researchers sought to identify the misconceptions about distance education among university lecturers. This literature review was pertinent because our study was going to include the experiences of university instructors and administrators in the implementation and utilization of online distance education. Thus it boded well to review a study of a sister educational system.

The study was conducted in three phases. The first phase conducted a detailed interview of nine lecturers to identify misconceptions. The second phase included semi structured interviews which were derived from reviewing the misconceptions identified in phase one. The third phase consisted of a quantitative study where 11 misconceptions identified from phase two were surveyed among 60 lecturers from the distance learning program at the University of Ibadan in Nigeria.

Overall the study found out that these lecturer participants had myopic, invalid and misleading perceptions of distance learning. The study also found out that the participants perceived online distance learning to be inferior to the classroom learning and had low quality assurance. The interesting item the researcher pointed out was the fact that some of these lecturers taught both the face-to-face classroom as well as the online version of the same course.

The online learning students received the same course materials and course information compared to the face-to-face classroom students. The researcher therefore questioned how a course version with the same lecturer and same treatment of students could be seen as inferior? The study also revealed that the lecturers perceived the online distance learning as less vigorous even though course materials, exams, quizzes, papers etc were the same for both versions of the course. The survey revealed that the online distance learning was for adult learners but a survey of the enrollments revealed that 80% of the online students were less than 35 years old.

The researcher purported that the misconceptions could be derived from the fact that most of the present lecturers were a product of the regular face-to-face classroom graduates and may have had some bias towards the face-to-face classroom environment and not quite a favorable perception towards the online education aspect. This typified again the perception of the society towards online distance education and in this scenario not in Ghana but in another part of Africa.

The study however had limitations. Based on its limited scope of only 60 lecturers from the distance learning program at the University of Ibadan in Nigeria, it was hard to use the study to generalize over the entire population of Nigeria. Nigeria is one of the biggest countries in Africa with a population of 167 million peoples with numerous educational institutions and instructors, (BBC World Africa, 2016). Thus 60 lecturers would not suffice to generalize on all of Nigeria. However the study provide a bird's eye view of the perception of instructors on a limited scope as well as their preparation towards the distance education courses.

In this literature review so far we have explored literature on the status and challenges of online distance education programs and the factors affecting the effective implementation and

utilization of online distance education programs in Ghana. However, we have realized that these challenges also expanded beyond the shores of Ghana to Nigeria and Kenya as well.

Perraton, (2000) and Gulati, (2008), provided a comprehensive insight and review of distance education in developing countries where Ghana fell into. Ronald, (1999) and Academic Partnerships, (2011), provided a comprehensive review and insight of distance education in various other aspects.

In these reviews we came across a history, transformation and growth of distance education through correspondence and transitioning to online education and learning through the years. The contrast we noticed between Perraton, (2000), Gulati, (2008) and Ronald, (1999), Academic Partnerships, (2011) was the difference in growth and transformation of technology as a whole and internet technology in particular in the various areas. Motives in the various regions were also different.

Whereas in the developed nations the growth of technology as a whole and internet technology propelled and transformed distance education growth and implementation into a natural part of the societal state, that was not the case for the developing nations.

In the developed nations, the challenges were on how to boost nontraditional enrollment and incorporate the busy professional and the lifelong learner into the distance education system. Distance education was thought of as a convenient and easier accessible way for the busy professionals and lifelong learners to incorporate themselves back into the educational system as well as provide an opportunity for nontraditional students to achieve their educational goals to enhance their career. This goal and motives would in turn develop and enhance a strong knowledge environment and economy.

Developing nations on the other hand were still focused on how to provide basic education and literacy to their people. Even with the variety of projects and programs instituted and implemented by the World Bank, European Commission, the United Nations Organization for Education, Science and Culture (UNESCO), the World Health Organization (WHO) and various other programs by other world organization, NGOs and national associations, developing nations were still lagging behind in distance education.

In this literature review therefore, we saw the various factors holding back the success and development of online distance education in the developing countries. Chief among them included the lack of infrastructure and poverty. Basic infrastructure such as roads, electricity, buildings and human factors such as food, clothing and shelter did not provide a suitable environment for distance education implementation and growth.

Then there were the constant tribal and ethnic wars and conflicts, mismanagement of resources by various government officials, lack of skilled professionals for the online distance education programs that did not bode well for the institution as well as implementation, growth, enhancement and sustainability of online distance education in Ghana. Then there was also the lack of political support, limited budgets, the lack of recognition of distance education graduates by the public sector which did not enhance the implementation and utilization of the online distance education programs.

In addition, there was the social factors of the perception of online distance education by the society in which some parents insisted their children pursue the traditional education because of the perception that the traditional degrees and certificates were more valued in the workplace compared to the online distance degrees and certificates. Moreover, the lack of a well-defined

distance education framework did not bode well for the implementation and utilization of the programs in Ghana.

Thus Ghana, even though is currently considered one of the stable countries and economies in Africa, (British Broadcasting Corporation, 2014, PricewaterhouseCoopers, 2013), is still a little below par in the true online distance education department compared to developed nations as we have seen portrayed in the Ghana universities. Students still have to travel to regional centers to participate in classroom discussions and visit with center instructors. Some materials were still being mailed to the centers for the students to make copies of. Infrastructure although has improved tremendously over the last few years is still inadequate. Student counseling and support is lacking, cost of education and materials is still unaffordable to some students, and government policies are still not supportive of the educational programs. This has resulted in the supply of inadequate and inexperienced instructors and facilities.

Even though Ghana faced all these challenges, there was evidence that online distance education is needed in Ghana due to the scarce accommodation resources available to accommodate all students on campus or provide face-to-face campus instruction and education to all students. A lot of qualified applicants were not able to be admitted due to space limitation. Since university expansions are slow and not the most available option, online distance education seems to be the viable option to be able to accommodate most of the qualified students. These obstacles therefore need to be addressed to be able to provide the necessary education to these qualified students which would go a long way to produce the next generation of scholars and workforce for the Ghana economy, Africa and the world as a whole.

CHAPTER 3

METHODOLOGY

The purpose of this study was to identify the status and challenges of online distance education programs in post-secondary institutions in Ghana. The literature review identified various challenges in online distance education programs in post-secondary institutions in Ghana. Even though the literature review provided a foundation of the challenges experienced by the online distance education programs in Ghana, the survey provided more information and feedback for analysis to confirm the literature.

This research collected field data through an online survey questionnaire to analyze and explore more information on the factors affecting the implementation and utilization of online distance education programs in post-secondary institutions in Ghana. This summarized field data in addition to the literature factors, produced an outcome that was used to make that general assumption on the status and challenges of online distance education programs in post-secondary institutions in Ghana. Using what is learned from the data collected and the literature, the information will be used to build a framework model for implementing online distance education programs for unique environments like Ghana in the next phase of this research. This chapter contains the research design, population, sample, the data collection process and the instrument used.

Research Design

The study used a survey research methodology to identify the status and challenges of online distance education programs in post-secondary institutions in Ghana. A similar study was conducted at the University of Nairobi and Kenyatta University (Anyona, 2009). The study was

conducted with 702 online distance education student respondents, 278 lecturers, two interviews and document analysis. As this study was similar to the present study and already validated and conducted in Kenya, another African country and environment similar to Ghana, it justified to replicate this study in the Ghana environment rather than creating a whole new survey instrument. Replicating another study in a different environment can help validate the instrument and help to be able to generalize across environments or find differences and commonalities within the different environments.

Population

Table 1 summarizes the population of the study.

Table 1

Study Population

Institution	Population	Target Sample Students	Target Sample Instructors	Target Sample Administrators
University of Legon	29,000	50-75	3-5	1-2
Kwame Nkrumah University of Science and Technology	30,000	50-75	3-5	1-2
University of Cape Coast	26,000	50-75	3-5	1-2
University of Education, Winneba	45,000	50-75	3-5	1-2
University of Professional Studies	10,000	50-75	3-5	1-2
Central University College	9,000	50-75	3-5	1-2
	149,000	**450**	**30**	**12**

The study population comprised all current students who were enrolled or have previously enrolled in an online distance education program in one of these institutions, the University of Ghana, Legon, the Kwame Nkrumah University of Science and Technology, the University of Cape Coast, the University of Education, Winneba, Central University College and the University of Professional Studies. Instructor and administrator population comprised of instructors that currently teach at one of these institutions and administrators that currently work at one of these institutions.

As described in the institution profiles, each institution offered some form of online distance education be it exclusive online classes or blended classes with a combination of online and onsite interaction. Thus, this population included traditional and nontraditional students as well as on campus and off campus students. The student age population varied from 18 years of age and above. Gender included both males and females who were pursuing a bachelors, masters or PhD degrees. These students were in varying years of education from year 1 through year 4. Instructors and administrators also included both male and female and there was no criteria for age limit.

The various institutions were in varying regions of Ghana. The University of Ghana, Legon and Central University College as well as the University of Professional Studies are located in the capital City, Accra. The Kwame Nkrumah University of Science and Technology is located in the city Kumasi which is towards the central part the country. The University of Cape Coast and the University of Education, Winneba are located on the central coast of the country. The institutions selected provided the ideal population to obtain the survey data sought for the study. The diverse population and regions allowed the ability to collect the correct data from the right environment that could be used to generalize on the entire Ghana population.

Sample

A sample size of 450 students, 30 instructors and 12 administrators was planned for this study. The sample target size of 300 students' complete responses was set by the Ghana Ministry of Education as adequate to use to generalize on the entire population of online distance education. The target size comprised all current students who were enrolled or have previously enrolled in an online distance education program in one of these institutions, instructors that were currently teaching at one of these institutions and administrators that currently worked at one of these institutions. Each institution was awarded the same sample size of 50-75 students, 3-5 instructors and 1-2 administrators. Class sessions were used to conduct the survey. These classes comprised of 20-30 students and 1-2 instructors. The sample included traditional and nontraditional students as well as on campus and off campus students spread across the geographic regions. The student age population varied from 18 years of age and above. Gender included both males and females pursuing a bachelors, masters or PhD degrees. These students were in varying years of education from year 1 through year 4. Instructors and administrators also included both male and female and there was no criteria for age limit.

Data Collection

The Data Collection process began with guidelines provided by the University of North Texas (UNT) Institutional Review Board (IRB) on human subject research participants. Based on the guidelines involving human subject participants, approval was needed from the institutions where the study was to be conducted as well as approval from the IRB. The IRB guidelines included a consent form for participants with information about the purpose of the study, procedures for data collection and confidentiality. An approval was requested and granted

by the Ministry of Education in Ghana which granted access to the institutions earmarked for data collection. The Ministry of Education approval was submitted in addition to an online IRB application which was approved.

Field data collection was the next step. An online survey was created using Google assessment and posted online with the live link provided to participants to take the survey. Two representatives in Ghana contacted the online distance education departments of the selected schools to arrange the survey conducting process with students, instructors and administrators as well as timeline. Spring semester school session was decided as the best timeframe to conduct the survey in order to be able to generate the appropriate response number.

As shown in Table 1, 450 survey participants were anticipated for students, 30 for instructors and 12 for administrators. However, there were some unforeseen difficulties experienced during the contact with the school representatives to arrange the survey collection process. One of the concerns was that the primary survey researcher was not present and therefore access could not be granted. The primary researcher (Stanley Adjabeng), had to travel to Ghana to the various institutions to meet with the institution representatives to gain access to the students and arrange a timeline. According to the institution representatives, it was disrespectful in their eyes to send representatives in the Ghanaian culture.

After meeting with the institution representatives, permission was granted to conduct the survey in various online distance education classes right after the class session. The instructor introduced the survey representatives who proceeded to explain the purpose of the survey, procedures and confidentiality. Questions were also answered and after that the live survey link was provided for the participants to take the survey. The instructor also took the survey during

these sessions. Meetings were also held with administrators and were provided the live links to take the survey at their convenience.

As the surveys were submitted Google assessment automatically compiled the data and results and provided basic descriptive statistical information. This summary was very useful because the data did not need to be tabulated and compiled into a statistical software to retrieve the statistical descriptive summary information.

Although Valley View University was one of the institutions planned to be included in the samples collection and population, several obstacles experienced did not allow the surveys to be conducted and responses collected. After meeting with the school representative, there were a number of reasons provided for not being able to grant access for the data collection. Reasons included the students not comfortable with responding to the surveys, nothing like this has been done at the school before and concerns over what students' responses might be that might negatively impact the outlook of the school. Moreover, the representative requested a monetary donation to several fund-raising activities that were ongoing at the institution and a donation could entice the institution to grant access.

The monetary donation was not in the plan of this study except for UNT souvenirs for participants. If a donation was made to this institution, then a donation would need to be made to all institutions participating in the study to level the playing field. Moreover, with permission granted from the Ministry of Education, a branch of the Ghana Government, any donation would be viewed as enticing and coercing these institutions to provide a favorable response therefore rendering the survey responses null and void and not favorable to the Ghana government.

Instrument

This study replicated a similar previous study by Anyona (2009), which was conducted at the University of Nairobi and Kenyatta University. The study was conducted with 702 online distance education student respondents, 278 lecturers, two interviews and document analysis. With a similar study already conducted in another country, this study replicated the Anyona (2009) study in the Ghana environment instead of creating and validating a whole new survey instrument. The Kenyan environment shares some similarities and differences with the Ghanaian environment.

In similarities, Kenya is a developing African country that was also under British rule like Ghana before gaining independence in 1963 (BBC World Africa, 2016). Thus their educational system is similar to the Ghana educational system. In differences however, Kenya experienced a different political and socio-economic history compared to Ghana that may have affected their educational system and technology.

Moreover, Kenya has different tribes and customs that affect the cultural, social and educational environment and perception. Thus it was interesting to replicate the study in Ghana which had a different environment compared to Kenya.

This study therefore adopted the same intrument used in the Anyona (2009). The instrument included both open ended and closed ended questions. This instrument was scrutinely validated for the study and using a Pearson correlation coefficient received a half test result of .79 for the student survey, a half test result of .81 for the instructor survey and using a corrected Spearman Brown prophecy formula, received a full test result of .88 and .89 respectively. The respective results concluded that the instruments were valid and reliable.

The study contained three survey instruments, one for students, one for instructors and a third for adminstrators. The student survey instrument contained 16 items, 14 multiple choice questions and two open ended questions. The instructor survey instrument contained 22 items, 17 multiple choice questions and 5 open ended questions while the administrator survey instrument contained 12 instruments, 5 multiple choice questions and 7 open ended questions. A few of the questions were modified to fit the Ghana environment such as the names of the universities the surveys will be conducted in, age brackets and the regions of study. These modifications did not affect the meaning and structure of the instrument. The instrment questions were also subgrouped to tailor them to the reseach questions as the table below. Thus the survey questions included questions to collect biographic data such as age, gender and geographic region. Other groupings included questions to obtain the status and structure of online distance education, experiences amd chanllenges of the online distance education as shown in the tables below.

Table 2

Student Survey Groupings

	Students	
Q5	Reasons for online distance education	Challenges
Q6	Satisfaction	Experiences
Q7	Cost effective study?	Cost of education
Q8	Method of instruction	Experiences
Q9	Method of instruction	Experiences
Q10	Method of evaluation	Experiences
Q11	Interaction adequate?	Experiences
Q12	Quality of instruction	Experiences
Q13	Time to cover syllabus	Experiences
Q14	How often receive feedback?	Experiences
Q15	Challenges	Challenges
Q16	Challenges	Challenges

Table 3

Administrator Survey Groupings

Administrators	
Q1	Status /Structure
Q2	Status /Structure
Q3	Status /Structure
Q4	Challenges
Q5	Status /Structure
Q6	Status /Structure
Q7	Status /Structure
Q8	Challenges
Q9	Challenges
Q10	Challenges
Q11	Challenges
Q12	Challenges

Table 4

Instructor Survey Groupings

	Instructors	
Q3	Compare delivery vs traditional	Experiences
Q4	Equipment used in instruction	Status/Structure
Q5	Opinion of equipment used	Experiences
Q6	Resource materials used	Status/Structure
Q7	Opinion on resource materials used	Experiences
Q8a	Program resources and delivery consistent with all locations?	Status/Structure/Experiences
Q8b	Suggestion to improve	Challenges
Q9	Performance of online students	Experiences
Q10	Is program well delivered?	Experiences
Q11	Adequate resources?	Challenges
Q12	Program staffing sufficient?	Challenges
Q13	Funding sufficient?	Challenges
Q14	Duration of contact with students	Experiences
Q15	Quality of services received	Experiences
Q16	Compensation in delivery?	Challenges
Q17	Compensation adequate?	Challenges
Q18	Proper motivation?	Challenges
Q19	Contract type	Challenges
Q20	Satisfaction with contract?	Challenges
Q21	Challenges	Challenges
Q22	Challenges	Challenges

CHAPTER 4

FINDINGS

Overview

The purpose of this study was to identify the status and challenges of online distance

education programs in post-secondary institutions in Ghana. Data was collected using an online

survey built using Google assessment. The data results were summarized using Google analytics

to provide basic descriptive statistics and to report the findings. The data revealed interesting

insights into the online distance education in Ghana. Table 5 portrays a summary of the

population of the survey.

Table 5

Summary of Survey Population

Institution	Population	Target Sample Students	Student Samples Collected	Percent	Target Sample Instructors	Instructor Samples Collected	Percent	Target Sample Administrators	Administrators Samples Collected	Percent
University of Legon	29,000	50-75	66	21%	3-5	4	29%	1-2	2	25%
Kwame Nkrumah University of Science and Technology	30,000	50-75	71	23%	3-5	3	21%	1-2	2	25%
University of Cape Coast	26,000	50-75	72	23%	3-5	2	14%	1-2	2	25%
University of Education, Winneba	45,000	50-75	56	18%	3-5	3	21%	1-2	1	13%
University of Professional Studies	10,000	50-75	44	14%	3-5	2	14%	1-2	1	13%
Central University College	9,000	50-75	0	0%	3-5	0	0%	1-2	0	0%
		450	309	69%	30	14	47%	12	8	67%

Out of a total of 450 projected student responses, 309 responses were received with a 69%

participation rate. For instructors, a total of 14 responses were received out of a projected 30

resulting in 47% participation rate and for administrators, 8 responses were received out of a

projected 12 resulting in 67% participation rate. Central University students, instructors and

administrators were not able to participate in this study due to institutional restrictions which were not foreseen at the time of preparation for the survey conduction.

Descriptive Statistics

In the student sample analysis as shown Figure 4, three out of the five universities were closely matched in terms of the samples collected. The Kwame Nkrumah University of Science and Technology and the University of Cape Coast received the highest percentage of samples collected at 23%. The University of Ghana, Legon received the third highest at 22% followed by the University of Winneba at 18% and the University of Professional Studies with the lowest respondents at 14%.
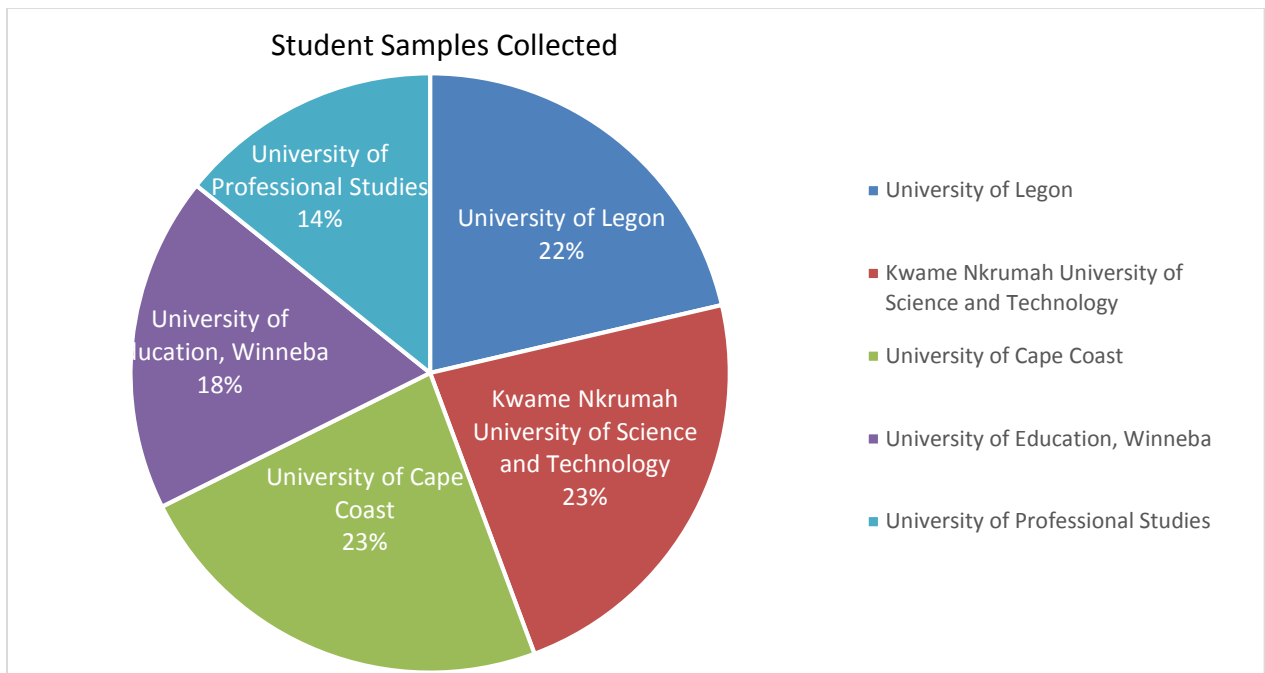
Figure 4. Student sample analysis.

In the instructor samples analysis, the University of Ghana, Legon received the highest respondents at 29% of the samples collected with the Kwame Nkrumah University of Science and Technology at 22% and the University of Winneba at 21% of the total samples collected.

The University of Cape Coast and the University of Professional Studies received the lowest

respondents at 14% each of the samples collected.
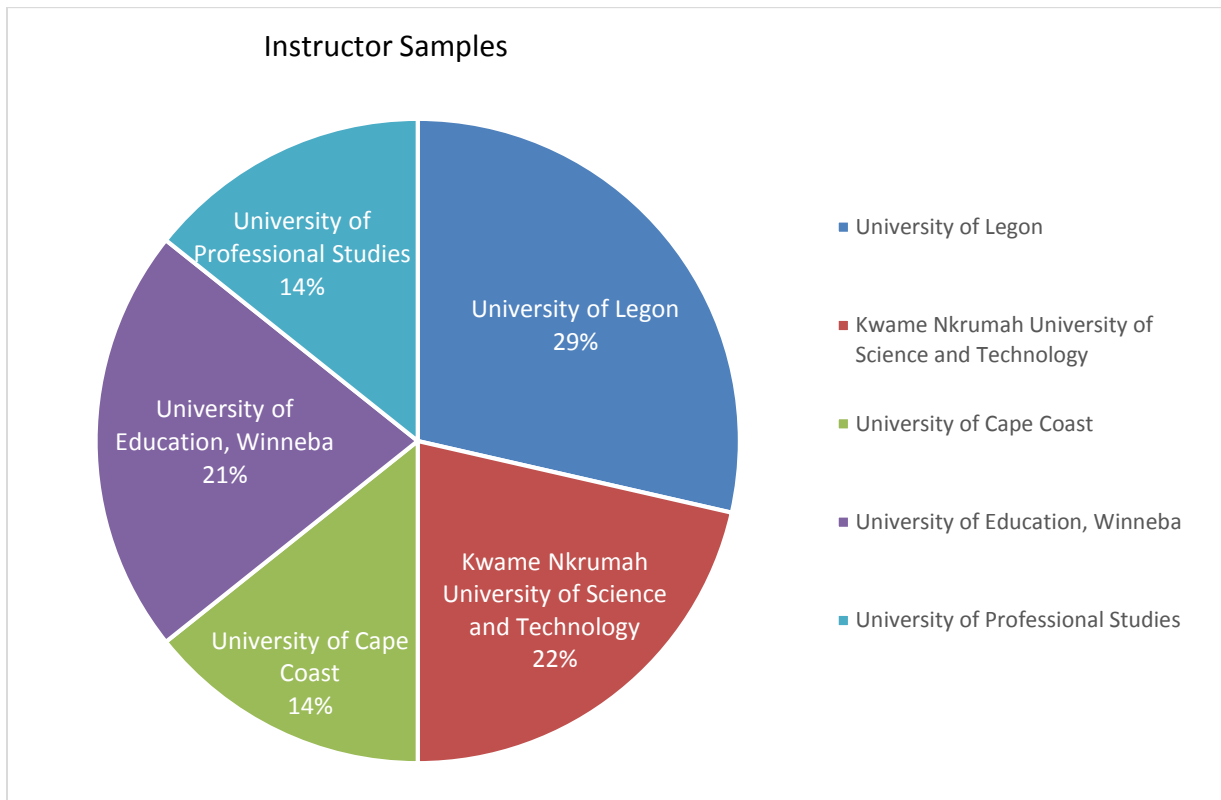
Figure 5. Instructor sample analysis.

In the administrator samples analysis, the University of Ghana, Legon, the Kwame

Nkrumah University of Science and Technology and University of Cape Coast received the

highest respondents at 25% each with the University of Professional Studies receiving 13% of

the respondents. The University of Winneba received the lowest respondents at 12% d of the

samples collected.
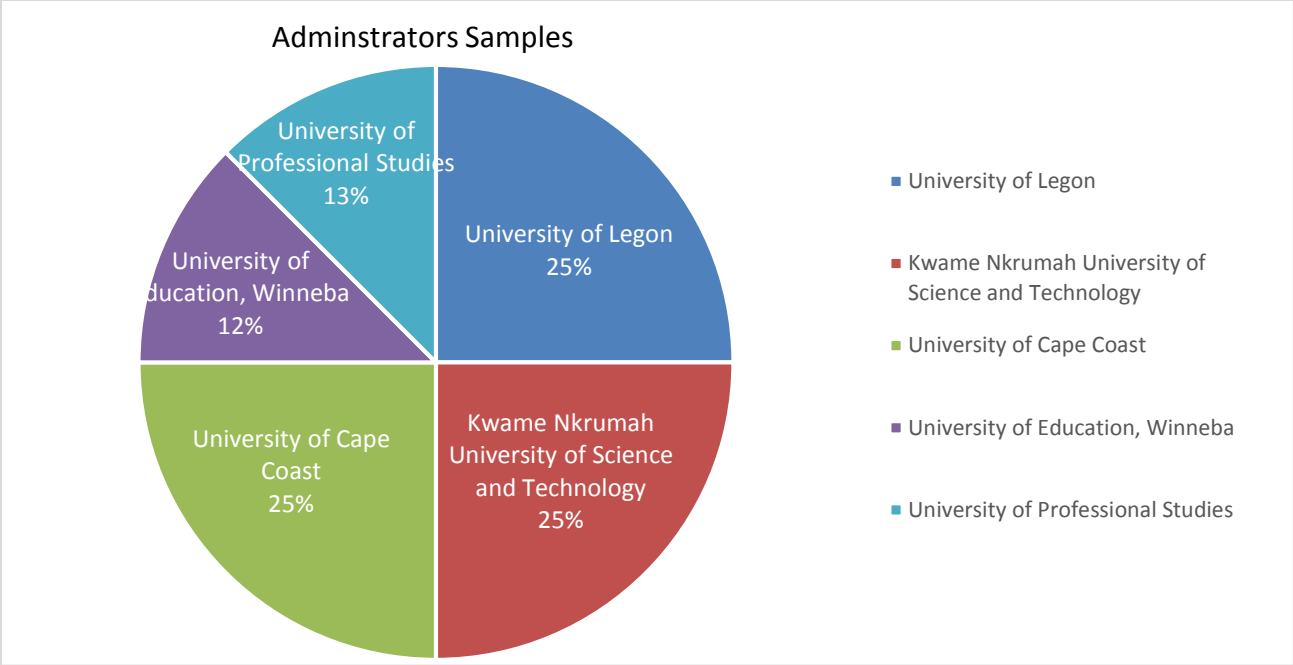
Figure 6. Administrator sample analysis.

In terms of descriptive statistics, as shown in Figures 7 and 8, 66.7% of the respondents were undergraduates while 33.3% of the respondents were graduate students. Also 50% of the respondents were 4th year students while the rest were either 1st, 2nd and 3rd year students with 16.7% of the respondents each respectively.
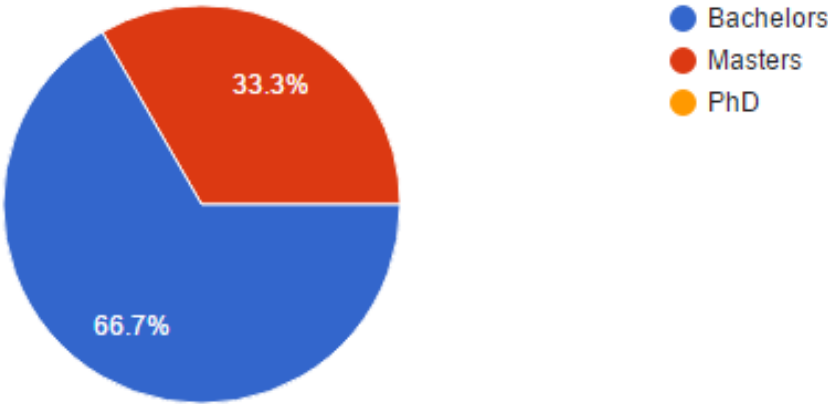
Figure 7. Level of study.
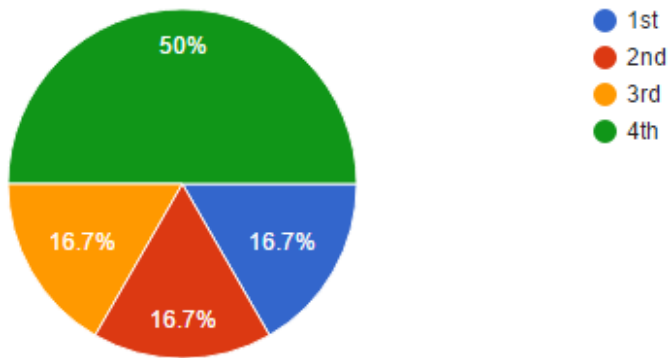
Figure 8. Year of study.

Within the gender bracket, 83.3% of the respondents were male while 16.7% of the respondents were female. Within the age bracket, 25-34 and 35-40 age brackets received the highest respondents of 33.3% each with 18-24 and 41 and above age brackets receiving 16.7% of respondents each respectively.
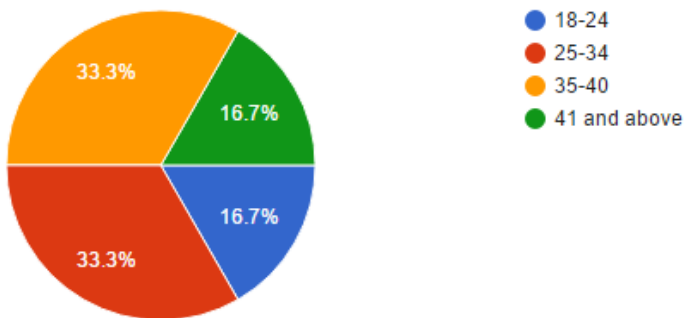
Figure 9. Age bracket.
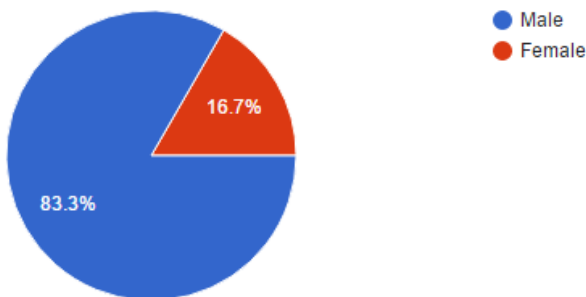
Figure 10. Gender.

In terms of the survey items, 83.3% of respondents overall were satisfied with the online

distance education program currently being offered by their universites while 16.7% were not

satisfied with the programs. In terms of tuition cost, 83.3% of respondents also thought the cost

of tuition was cost effective compared to 16.7% that thought the education was not cost

effective.

6a. Are you satisfied with the open and distance learning program delivery and organization?
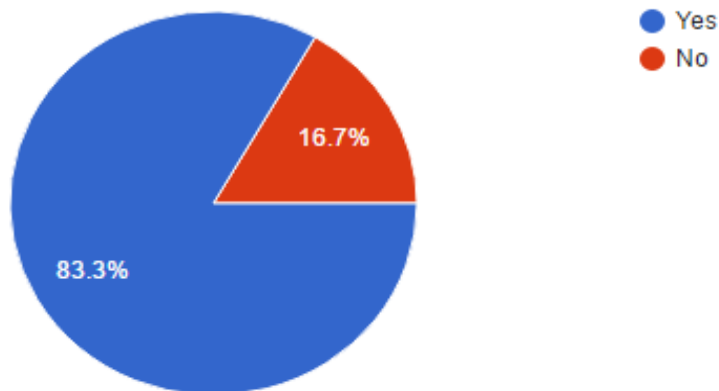
Figure 11. Satisfied with current online program.

7. Is your programme of study cost effective?
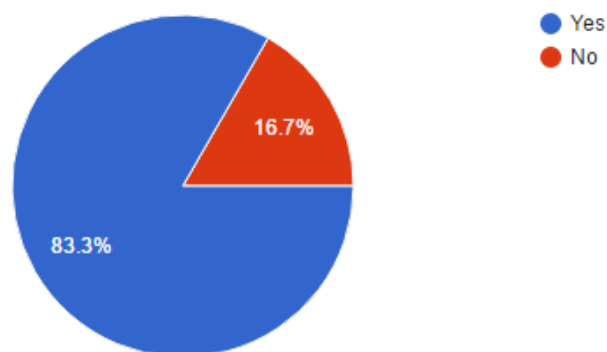
Figure 12. Cost effective responses.

The survey responses also portrayed the diverse method of instruction offered by the various institutions. In the method of instuction, 33.3% of the instructions were still either exclusively face-to-face or over the internet each respectively and 16.7% of the method of instruction was either modules or a hybrid of face-to-face and online. In the overall effectiveness of the method of instruction, 83.3% rated the collective methods of instruction as moderately effective while 16.7% rated the methods of instruction as not effective.
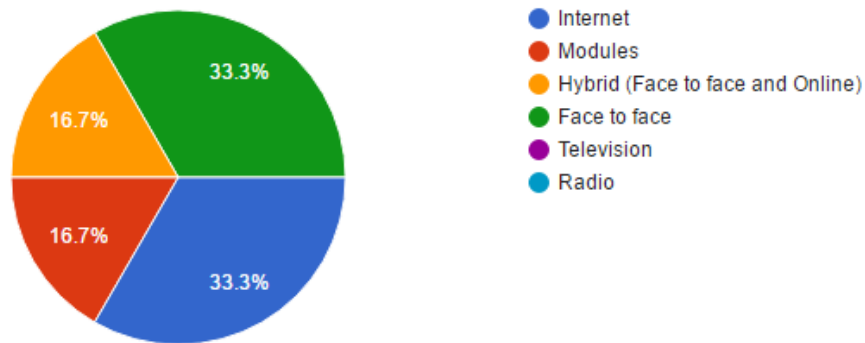
8. What is the method(s) of instruction used?

Figure 13. Method of instruction used.

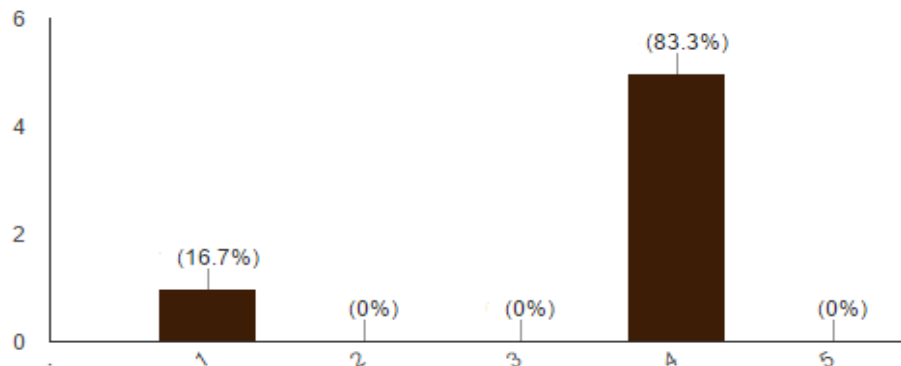## 10b. How do you rate the method(s) of evaluation used?

Figure 14. Effectiveness of delivery method (1 = not effective, 5 = very effective).

In terms of the individual effectiveness of the method of instruction 50% of respondents agreed that the internet method of instruction was effective, 16.7% thought the method of instruction was moderately effective and 33.3% of the repondents thought the internet method of instruction was slightly effective. In the modules method of intruction, 50% of respondents thought the method of instruction was moderately effective while 33.3% thought it was effective and 16.7% thought the modules method of instruction was not effective.

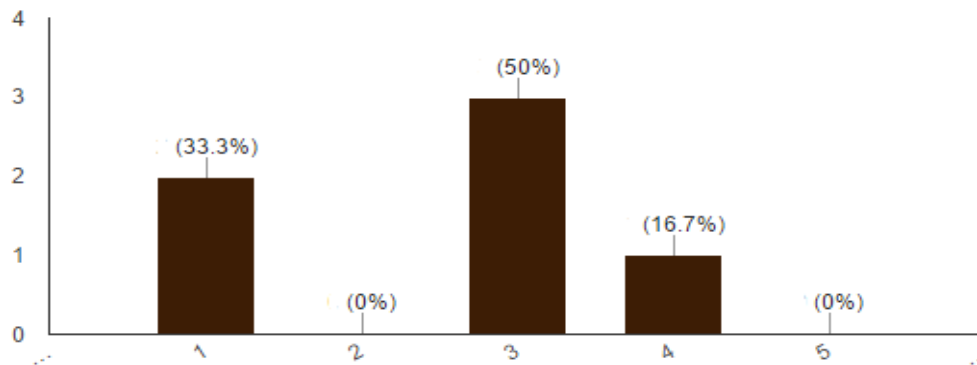## 9a. How do you rate the method(s) of instruction used? Internet

Figure 15. Effectiveness of internet delivery (1 = not effective, 5= very effective).

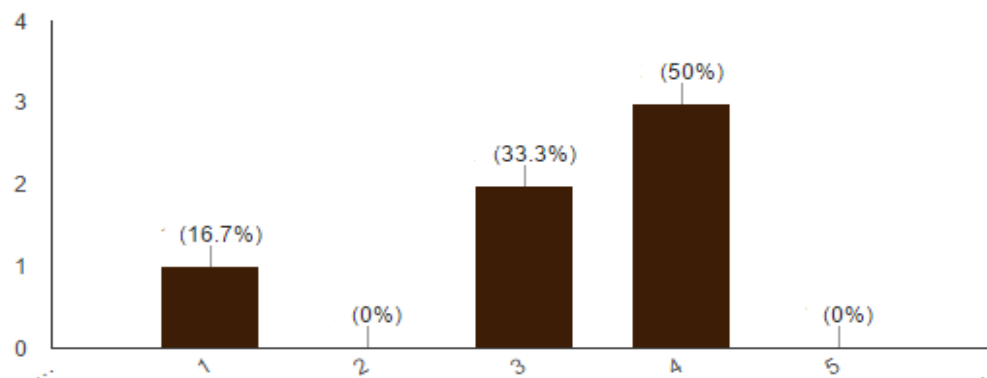## 9a. How do you rate the method(s) of instruction used?Modules

Figure 16. Effectiveness of module delivery (1= not effective, 5 = very effective).

In the hybrid method of instruction 33.3% thought the method of instruction was either not effective, effective or very effective respectively. This is an area where further exploration or interviews could be conducted to understand and find out the reasons why the third part of the respondents rated the internet method not effective. In the face-to-face method of instruction, 20% of respondents responded that the method of instruction was not effective, 20% thought it was slightly effective, 40% thought it was moderately effective and 20% of the rest of the respondents thought the method of instruction was very effective.

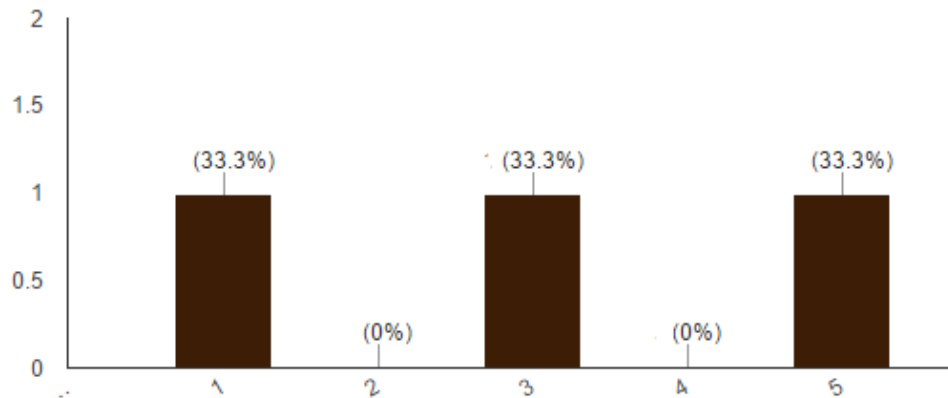## 9a. How do you rate the method(s) of instruction used?Hybrid

Figure 17. Effectiveness of hybrid delivery (1 = not effective, 5 = very effective).

9a. How do you rate the method(s) of instruction used. Face to face
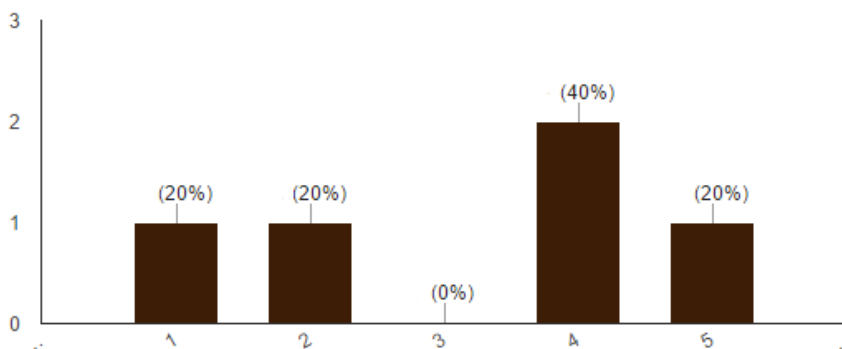

*Figure 18.* Effectiveness of face-to-face delivery (1 = not effective, 5 = very effective).

In the radio and television method of instruction, one can deduce from the reponses that they were not favorable to respondents. In the television method of instruction, 50% of the respondents thought the method was not effective while 50% responded that the televsion method was effective. No responses were received for moderately effective or very effective. In the radio method of instruction, the unfavorability was very noticeable with 66% of respondents responding as not effective while 33% responded as effective. No responses were received for moderately effective or very effective. It should be noted that in the overall method of instruction, the television and radio method of instruction did not receive any responses as a method being used or offered as part of any of the programs at the institutions.

9a. How do you rate the method(s) of instruction used. Television
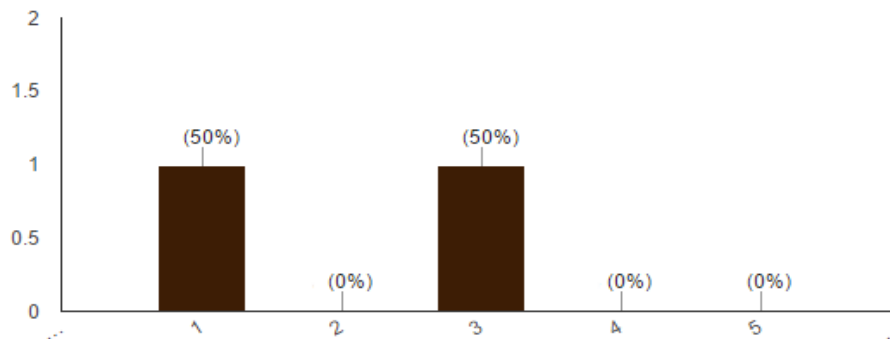
Figure 19. Effectiveness of television delivery (1= not effective, 5 = very effective).

9a. How do you rate the method(s) of instruction used. Radio
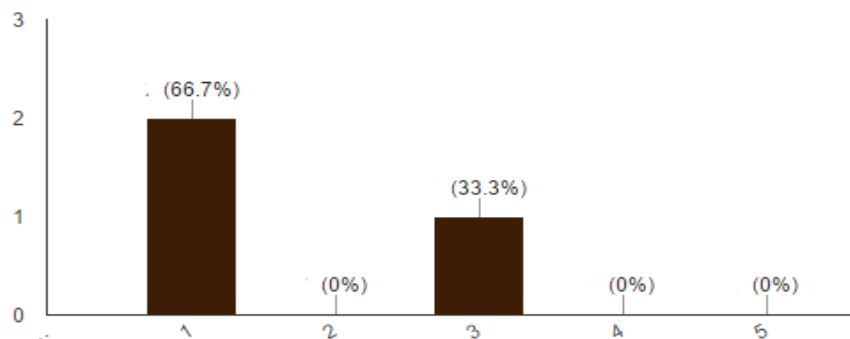
Figure 20. Effectiveness of radio delivery (1 = not effective, 5 = very effective).

In terms of interaction, feedback and quality of instruction, there were favorable results. 83.8% responded that their time of interaction with intructors was adequate. This can probably be attributed to the setup of the regional centers by the various institutions where students often met instructors for class discussions, class meetings and one-on-one discussion sessions. As a result we notice the favorable responses on receiving feedback with 50% responding that they received feedback most of the time, 33.3% responding as receiving feedback all the time and only 16.7% responding to not receiving feedback. The quality of instruction was also rated higher with 33.3% of the responses rating effective and moderately effective each while 16.6% responded as not effective and slightly effective in thos categories.

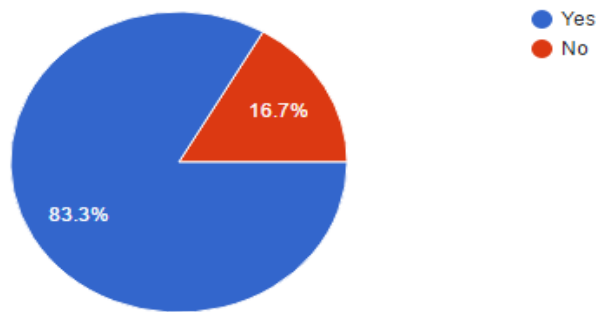## 11a. Is the time of interaction with the instructors adequate?

Figure 21. Time with instructor.

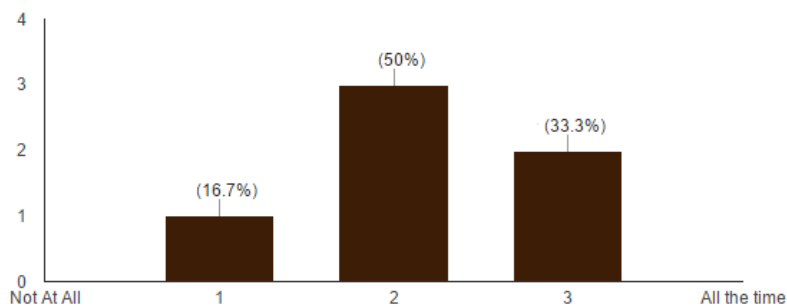## 14. How often do you receive feedback on your assignments and examinations?

Figure 22. Frequency of instructor feedback.

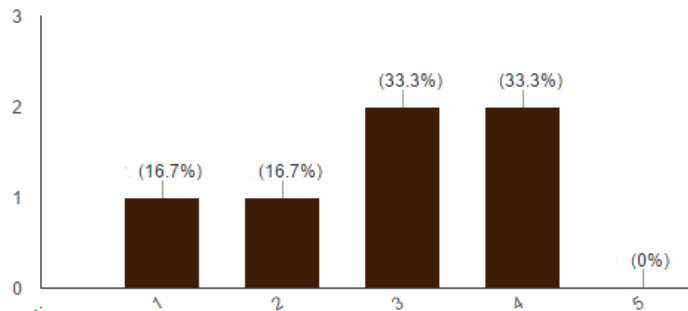12a. How do you rate the quality of instruction you receive?

Figure 23. Quality of instruction received (1 = not effective, 5 = very effective).

In terms of syllabus, there was enough time to cover the course syllabus 66.7% of the time while 33.3% of the syllabus was not covered due to time constraints. From additional comments, most of the students attributed school stoppages during some of the semesters as the main reason for the inability to complete the syllabusses. Other comments also attributed extra time spent with students on some of the course materials, providing feedback to students and projects being incorporated into the syllabus as other reasons. Hence we see the favorable rating reflected in the interaction and feedback ratings.

13. Do you usually get enough time to cover the syllabus?
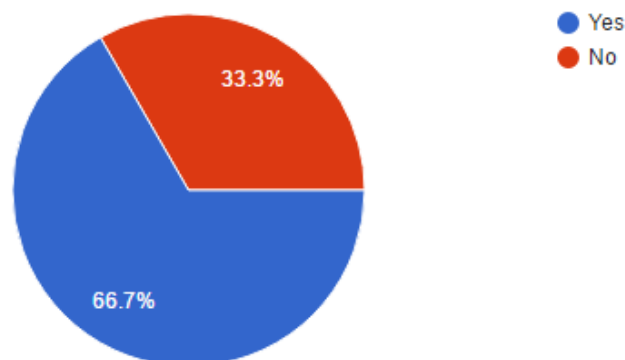
Figure 24. Enough time to cover syllabus.

In content summary, respondents were asked to provide further feedback about benefits

or challenges they faced in the online distance education programs offered by their schools. The responses can be summarized by convenience (combining school and work), favorable admission rates where students were able to gain admission into the online distance education programs whearas they would not have been able to be accepted into the traditional on campus programs because of the scarce accommodation facities, saving on time and distance cost, favorable tuition program (payment arrangements with payments per semester rather than per year), the ability to understand materials due to the convenience of interaction feedback with instructors and overall the ability to attend university and graduate with a degree.

CHAPTER 5

SUMMARY AND DISCUSSION

Research Question 1

What is the current status and structure of online distance education programs in post-secondary institutions in Ghana?

In the introduction section, we examined the [status and structure of online education in post-secondary institutions in Ghana](#) and also reviewed the profile of these institutions. In the corresponding survey, several questionnaire items in the administrator and instructor surveys were geared towards finding the status and structure of online distance education in these institutions.

From the research and survey, all the post-secondary institutions examined had a Local Area Network (LAN). These LANs provided internet and intranet access to all students, faculty and administrators. The LAN also hosted an online library catalog that housed a variety of books, articles, periodicals and other educational materials. It also allowed researchers to access other materials that were not housed in the library catalog but were available through the internet or other libraries, catalogs or periodicals throughout the world.

The LAN also hosted a server that stored and maintained student records and registration information. Computer labs provided throughout the campus for students allowed access to regular school materials and any other materials provided by the school or instructors. Students were also able to access the network with their private devices.

Most importantly these LANs hosted a learning management system which the institutions' distance learning departments used in implementing and delivering online distance education programs and courses. These learning management systems made it easy for the

institutions to have course materials available to students online, hold online meetings and class discussions as well as feedback sessions.

Part of the president's education initiative in 2002, was also to provide funds for all institutions that implemented the online distance education program to support and improve their technology in the online distance education programs. Thus, all the institutions in the study received funds and used these funds to build new technology infrastructure or improve the existing infrastructure to support the online distance education programs, (Kwarteng, 2010).

Regional centers were also instituted to provide access to students throughout the country with instructors available to discuss course materials and face-to-face meetings. This has improved interaction, feedback and quality of instruction and moral as portrayed in the survey results.

Research Question 2

What are the enrollment rates in the various post-secondary institutions in Ghana?

Although online enrollment rate figures were not readily available for comparison over the years due to the institutions' hesitancy to release such information, enrollment rates as portrayed in the [status of online education in post-secondary institutions in Ghana](#) showed an increase in enrollment rates. Before the implementation of the inline distance education programs, only a limited number of students were able to be admitted to the institutions due to limited accommodation and facilities, (Ghanaweb, 2014).

However, due to the implementation of the online distance education programs, all qualified students were able to be admitted to the institutions be it on campus or online. This has increased enrollment rates in these institutions and post-secondary institutions as a whole in

Ghana. This is in line with the findings of the National Center for Education Statistics (NCES) of the U.S. Department of Education that online distance education improves enrollment rates, (NCES, 2016). Some of the comments in the survey responses included phrases such as "Online distance education has enabled me to pursue my education," "I will not be admitted if it was not for distance education," "I can work and go to school at the same time."

Research Question 3

What are the experiences of students, instructors and administrators in online distance education in post-secondary institutions in Ghana?

The survey results revealed a number of informative experiences of the students, instructors and administrators in the online distance education programs in post-secondary institutions in Ghana.

Positive Experiences

- Access to post-secondary education through online distance education

As a result of the Ghana government's initiative to provide and improve access to post-secondary education to all students, various tertiary institutions implemented some form of distance education be it online or blended. The addition of online distance education improved enrollment rates. Students were able to gain access to post-secondary education based on their qualification and not on the availability of accommodation. Additional comments from the survey results commented on their happiness and relief of the ability to gain admission to post-secondary institution and be able to obtain their bachelor, masters or PhD degrees and not be viewed in society as drop outs. Some of the comments in the survey responses included phrases

such as "Online distance education has enabled me to pursue my education," "I will not be admitted if it was not for distance education," "I can work and go to school at the same time."

- Access to internet, library, computer labs

These tertiary institutions provided internet access to all students for communication and research purposes. Due to funding received from the Ghana government, technology infrastructure was either built or improved in the various institutions. Computer labs were provided for students' access and the campus LAN network was also accessible via personal devices. The LAN also hosted an LMS that provided access to course materials. These initiatives improved student morale about online distance education courses. Students no longer had to make copies of course materials or have materials mailed to them. Feedback received from the administrator survey revealed that 100% of the administrators were happy with the technology improvements in their institution.

- Regional centers

These tertiary institutions also offered exclusive online distance education programs or a blended form of distance education. As discussed in the various institution profiles, regional centers were established throughout the country and staffed with instructors. These instructors held regular classroom sessions or meetings for blended programs so that online and blended students had access to instructors. This meant that students did not have to travel thousands of miles to the main campus for classes. Students were also able to make appointments for one-on-one face-to-face meetings or online meetings or discussion sessions with these instructors to help understand course materials or answer student questions on course materials.

- Feedback and interaction

The survey also revealed positive frequent feedback and interaction between the students and instructors. From the survey responses, feedback and interaction received favorable responses. 83.8% of respondents responded that their time of interaction with intructors was adequate. In terms of feedback, 50% responded that they received feedback most of the time, 33.3% responded as receiving feedback all the time and only 16.7% responded to not receiving feedback.

The main theme from additional comments received from the responses attributed the regional setup as the main reasons for the favorable responses. The regional centers as well as the online access enabled the ability to have easy and ready access to facilities, materials and instructors. Comments such as "I don't have to travel 500 kilometers to meet my instructor. Now I only have to take trotro to town to attend weekend classes"; "Weekend meetings were valuable to me to discuss the chapters with my classmates and professor"; and "I was able to speak face to face with my professor who provided me directions on how to correct my paper."

The regional centers setup by the various institutions was a very valuable setup because students were able to meet with instructors for class discussions, class meetings and even one-on-one discussion sessions.

The online and blended students had readily access to instructors and feedback and did not have to travel thousands of miles to the main campus for meetings and class sessions. Students were also able to make appointments for one-on-one face-to-face meetings or online meetings or discussion sessions with these instructors to help understand course materials or answer student questions on course materials.

This process of regular feedback and interaction between students, administrators and instructors improved the positive outlook among students towards online distance education.

These students felt as part of the school system as evidenced in the survey results. As a result we notice the favorable responses on receiving feedback from the survey results as supported in Selma Vonderwell's study, (*An examination of asynchronous communication experiences and perspectives of students in an online course: a case study*), that online distance education improves interaction between instructors and students, (Vonderwell, 2002).

- Quality of instruction

Quality of instruction was also rated high with 66.6% of the responses rating effective and moderately effective while 33.4% responded as not effective and slightly effective. In order to improve the quality of instruction and the tertiary institution programs and their status as a whole, some of the institutions hired foreign qualified and experienced instructors from abroad to help improve the online distance education programs. As a result of the new instructors being injected into the educational system, quality of instruction, interaction and feedback improved as evidenced also from the survey data collected. This supports the view from Moore, 1993, that the instructor is pivotal in providing a favorable learning environment in which the learner has the opportunity for appropriate interactions with course materials, the instructor, and other students (Moore, 1993).

Negative Experiences

- Cost of education

Cost of education was still mentioned as one of the challenges in online distance education. Even though enrollment rates were higher with the online programs implemented and more workers were able to pursue their education through online programs, some students and families were still not able to afford post-secondary education in Ghana. Based on the student

survey responses 83% of student responses favored the cost of education as affordable, however 17% of the respondents still thought the cost of education was still high and unaffordable. With Ghana's annual per capita income at $766 (The World Bank, 2013), it is understandable that some of the population will not be able to afford post-secondary education.

- School stoppages

The injection of foreign instructors though improved the quality of instruction, interaction and feedback, there was also the negative side to the employment of these foreign instructors. From additional comments from some of the instructor survey responses, 70% of the instructors voiced feeling inferior to their foreign counterparts in performing their job. Some of the comments that stood out included "Why are they hiring foreign teachers? Do they not think we can perform the job adequately?"; "We were here before they came, why are they being paid more than us?"; and "We have been here in the trenches and did all the major work, now they come to enjoy the fruits of our labor."

The locally trained instructors have perceived that the new instructors from abroad were better paid than the locally trained instructors while the locally trained instructors perceived they were not paid enough to begin with. This has caused some friction with the locally trained instructors who periodically go on strikes to demand better remuneration and treatment. A result of this is several school stoppages during the academic year affecting student classes and graduation dates, (Ghanaweb, 2016, University Teachers Association of Ghana (UTAG), 2016).

The school stoppages have also resulted in the ability of the syllabus not to be completed 33.3% of the time and only being completed 66.7% of the time based on survey results.

- Course structure

One other challenge revealed from the survey responses was the structure of instruction

evaluation. With the current structure, students take an exam at the end of the semester which determines whether they pass the course or not. Suggestions offered within the survey results recommended to include projects as part of the evaluation and not just tests and exams. This will help provide the students with hands-on experience from their studies rather than just the theoretical aspects. Moreover, it will create a fun and motivating learning environment for the students which will enable them take an active role in the course and projects, (Katz, 1994).

Research Question 4

What are the challenges in the implementation (administrators), utilization (students) and delivery (instructors) of the online distance education in the various post-secondary institutions in Ghana?

Even though a lot of improvements have been made in the online distance education in the various post-secondary institutions in Ghana, there were still some challenges expressed in the survey results.

Cost of education was still mentioned as one of the challenges in online distance education. Even though enrollment rates were higher with the online programs implemented and more workers were able to pursue their education through online programs, some students and families were still not able to afford tertiary education in Ghana. From the survey results, 17% of the respondents still thought the cost of education was high and unaffordable. With Ghana's annual per capita income at $766 (The World Bank, 2013), it is understandable that some of the population will not be able to afford post-secondary education.

Another challenge was the strikes of the locally trained instructors that has caused several school stoppages throughout the academic year. The locally trained instructors have went several strikes claiming that their wages were not up to par compared to their foreign counterparts. Some

have claimed they are not paid for several months. Moreover, with the schools hiring some experienced instructors from abroad, they are claimed to be paid higher than the locally trained instructors. There is therefore dissatisfaction within the locally trained instructors and this has resulted in several strikes over the years, which has resulted in several school stoppages over the academic year. This has delayed syllabus completion and on time graduation.

From additional comments from some of the instructor survey responses, 70% of the instructors voiced feeling inferior to their foreign counterparts in performing their job. Some of the comments that stood out included "Why are they hiring foreign teachers? Do they not think we can perform the job adequately?" "We were here before they came, why are they being paid more than us?" "We have been here in the trenches and did all the major work, now they come to enjoy the fruits of our labor."

The locally trained instructors have perceived that the new instructors from abroad were better paid than the locally trained instructors while the locally trained instructors perceived they were not paid enough to begin with. This has caused some friction with the locally trained instructors who periodically go on strikes to demand better remuneration and treatment. This has resulted in several school stoppages during the academic year and affecting student classes and graduation dates, (Ghanaweb, 2016, University Teachers Association of Ghana (UTAG), 2016). The school stoppages have also resulted in the inability of the syllabus to be completed 33.3% of the time and only being completed 66.7% of the time based on survey results.

One other challenge revealed in the survey data was the structure of instruction and evaluation. With the current structure, students take an exam at the end of the semester which determines whether they pass the course or not. Suggestions offered within the survey results recommended to include projects as part of the evaluation and not just tests and exams. This will

help provide the students with hands-on experience from their studies rather than just the theoretical aspects. Moreover, it will create a fun and motivating learning environment for the students which will enable them take an active role in the course and projects, (Katz, 1994).

In terms of infrastructure, there is still the frequent power outages that occur throughout the country as a result of power rationing. Although infrastructure has improved with the implementation of internet technology, computer labs and many other improvements in these institutions, there is still the frequent power outages that affects the utilization of these technologies. All responses from the students, instructors and administrators mentioned power failure as one of their biggest challenges. Students are not able to access course materials or attend online interaction sessions. Instructors are not able to hold class sessions or perform online course work. Administrators are not able to perform their course administrative duties.

Some of the universities have tried to combat this frequent power outages by installing backup battery systems for their servers but these battery systems only sustain the campus for a limited amount of time or a limited area of the campus or facilities. This has caused limited access to campus technology, information, course materials, disrupted online discussion and meeting sessions as well as test and exam sessions, (Ghanaweb, 2014).

All administrator responses expressed the concern of the need for the institutions to continue to secure funding and the government to continue to help update technology. According to the instructors, although infrastructure has improved with the implementation of the various technology projects, measures still need to be taken to make sure these equipment and technology are maintained and frequently updated to continue to provide the necessary services these institutions are providing now and cope with the future demand. If maintenance does not continue, equipment will become outdated and with the growing educational need, their

institution will revert to the old days of not being able to provide effective online distance education.

Research Question 5

Are there social, economic, technological and educational challenges faced in the online distance education programs in post-secondary institutions in Ghana?

In the current Ghana environment, as evidenced in the research data, there is no direct social, economic, technological and educational challenges that seem to affect online distance education. In fact the various social, economic, technological and educational conditions have actually improved.

Economically more students, workers and familes are able to afford education and have a choice of online distance education or the traditional university campus experience. More students are able to acquire post-secondary education. The working populace can combine both working and pursuing their education which was a favorable mention in the surveys. Ghana has also improved in their per capita income over the years, (The World Bank, 2013). This will result in Ghana being able to continue to produce distinguised qualified professional.

Politically, the political climate has stabilized over the years since 1992 with the election of a democratic government from military rule. Subsequent general elections have occurred with political power handover from one party to the other or continuity of that political party in government depending on the electoral results without any political turmoil.

Political stability has therefore been sustained over the last few decades which has promoted economic growth. More Ghanaian citizens and families are able to enjoy the stabilized political atmosphere to concentrate and improve on their economic endeavors. This has enabled more sudents and families to afford post-secondary education. However based on the survey

data, 17% of the respondents still percieve post-secondary education as still expensive and unaffordable.

Socially, the perception of an online degree by the Ghana society and hiring organizations and businesses has also improved. Traditional degrees and online degrees are currently viewed the same. The online degree was viewed earlier as not as effective or hold enough weight as the traditional university degree (Asunka, 2008). But with the present perception there are no social challenges based on the survey data in the online distance education program or degrees received through online distance education. Additional comments from the survey results commented on their happiness and relief of the ability to gain admission to post-secondary institution and be able to obtain their bachelors, masters or PhD degrees and not be viewed in society as drop outs.

Technologically and educationally, a lot has improved. As a result of the Ghana government's initiative to provide and improve access to tertiary education to all students, various tertiary institutions revamped their university technology and implemented various technological structures to help in the smooth access of data, communication and ease of operations. Part of these improvements included some form of distance education be it online or blended.

These tertiary institutions provided internet access to all students for communication and research purposes. Computer labs were established for students use to access course materials, communicate and perform daily student activities. Students were able to access course materials online through a learning management system hosted by the school's local area network. This improved student morale towards online distance education courses. Students no longer had to make copies of course materials or have materials mailed to them. This improved enrollment

rates and students were able to gain access to tertiary education based on their qualification and not on availability of accommodation.

These tertiary institutions also offered exclusive online distance education programs or a blended form of distance education. Regional centers were established throughout the country that were staffed with instructors to hold regular classroom sessions or meetings for blended programs. Online and blended students had access to instructors and did not have to travel thousands of miles to the main campus. Students could make appointments for one-on-one face-to-face meetings or online meetings or discussion sessions with these instructors to help understand course materials or answer student questions on course materials. Experienced instructors from abroad were hired to help with the quality of instruction and also help introduce international universal educational flavor into the educational system.

The educational structure helped in frequent feedback and interaction between the students and instructors. Quality of instruction therefore improved as well as the overall tertiary educational system.

There are however other outside sources of challenges that affected the educational and technological atmosphere. As discussed in the challenges, the frequent power outages cause limited use of the campus, educational technology and access to course materials, communication and feedback. The frequent strikes by the locally trained instructors also caused stoppages during the academic year therefore causing delays in the academic calendar, completion of syllabus and student graduation.

Recommendation and Future Studies

During the course of this study, there were a number of findings and recommendations that emerged or created opportunities for future studies.

First is the recommendation of incorporating projects into the online distance education courses. The [Ghana Educational System](#) as discussed earlier in the introduction was modeled under the British system of education. The British system of education promoted intellectualism as compared to practical hands-on activites. This process continues to be the norm in the post-secondary institutions in Ghana. Incorporating projects will provide a hands-on approach to real life situations to the students to get them prepared for after graduation as compared to the current theoretical practices. Moreover, it will create a fun and motivating learning environment for the students which will enable them take an active roll in the course and projects, (Katz, 1994).

With the incoporation of foreign trained instructors into the various institutions, course syllabus and structures can be restructured to incorporate projects into the courses to promote real life hands-on practices on the various subjects being learned. An internship partnership can also be established with government agencies, NGOs and other private businesses to provide internship opportunities to students to acquire real life experiences. This will help enhance the practical knowledge of the students and improve them to be up to par with other international university practices around the world. This will also help the students to gain practical knowledge in the field of practice so that when they successfully secure a job in that field they will be familiar with the environment rather than just the theoritical aspects.

Secondly, survey results collected for the hybrid method of instruction stated that 33.3% of the respondents for each category thought the method of instruction was either not effective, effective or very effective respectively in each category. This is an area where further interviews

can be performed to understand and find out the reasons why the 33% of the respondents rated the hybrid method of instruction not effective as no further comments were provided by respondents. Challenges and solutions cound be identified during this process.

The electricity problem in the country is one that affects almost everyone in the country due to rationing of the electricity. Due to droughts over the years the Electricity Company of Ghana (ECG) is not able to provide consistent uninterrupted electricity service to the whole country, (ECG, 2016). Ghana's electricity is generated from electric turbines from a man made dam built for the purpose of generating electricity. With water levels low due to drought, the turbines are not able to provide as much electricity as they have in the past hence the rationing, (Volta River Authority, 2016).

A solution however can be derived from solar. Ghana is in a tropical region of Africa just north of the equator and enjoys a temperature of an average of 21-28 degrees celcuis throughout the year in all parts of the country with sunshine almost every day of the year, (Ghanaweb, 2016). If these institutions adopted solar energy as a source of their power, there is more than enough solar energy that can be generated to service entire campuses without relying on the hydro electricity.

An energy sector review by Maame Esi Eshun and Joe Amoako-Tuffour revealed that Ghana has the potential to generate an average wind power of 2000 megawatts and an average solar power of 35 exajoules which is about 100 times Ghana's present power consumtion. Ghana therefore has the potential to generate more than enough electricy than needed for consumption, (Eshun and Amoako-Tuffour, 2016). Adoption of wind and solar energy in addition to the hydro electric power currently available will alleviate the electricity problems in Ghana and the post-

secondrary institutions. These institutions could partner with government agencies as well as non governmental organizations and UN organizations to secure funding for these solar projects.

Thirdly the academic stoppages due to strikes by the locally trained instructors could be solved by implementing a training program by sending these instructors abroad to conferences and refresher training sessions to partner with other institutions to gain exposure. The government could reward these instructors by providing stipends or salary raises to help boost the moral of the instructors, (Wong, 2016).

Funding could also be secured with partnership with government agencies as well as non governmental organizations and UN organizations. There are several schools and organizations all over the world that are willing to sponsor instructors to gain exposure and share best practices. This should go a long way to improve the image and experience of the local instructors as well as solving the strike issues and providing a smooth and consistent academic year .

Fourthly, although infrastructure has improved with the implementation of the various technology projects, measures still need to be taken to make sure these equipment and technology are maintained and frequently updated. Periodic maintenance will ensure provision of the necessary services these institutions are providing and be able to cope with the consistent and future demand. All administrator responses expressed the concern of the need for the institutions to continue to secure funding and the government to help with funding to update equipment and the technology as they get older. If not, equipment will become outdated and with the growing educational need, their institution will revert to the old days of not being able to provide effective online distance education.

Finally, a future study is the standardization of the online distance education program in Ghana. Currently, most of the institutions provide and offer different implementations of tthe

online distance education program. More research could be done to identify best working practices and use that to create a framework for online distance education in Ghana. Creating this framework will provide a benchmark and starting point for all institutions in Ghana looking to implement an online distance education program. With Ghana considered a third world country and similar to other African and third world countries or communities all over the world, this framework could even be used as a benchmark in their implementation of online distance education program for environments similar to Ghana.

Conclusion

Ghana is a unique developing country that has aspired to educate its populace and provide the best life for it citizens through political stability, best education, infrastructure, social and economic programs and services. However it still lags behind in most of these areas compared to the developed countries.

In this study we explored the status and challenges of online distance education programs in post-secondary insitutions in Ghana. The paper sought to identify the factors that affected the implementation and utilization of online distance education programs in post-secondary institutions in Ghana.

Through research and survey responses from various institutions across various geographic regions in Ghana, there was enough information acquired to generalize on the status and challenges of online distance education programs in post-secondary insitutions in Ghana. The government of Ghana in an attempt to solve the poor enrollment rates for admission into post-secondary institutions, charged these institutions to find solutions to the deepening

enrollment problem. These post-secondary institutions responded by implementing some form of online distance education programs to accommodate all qualified students that sought admission.

With funding from the Ghana government, various infrastructure was built or improved to offer access to online distance education, materials and instructors. Technology infrastructure upgrades enabled these institutions to provide exclusive online courses or blended face-to-face and online courses. Course participants were able to access course materials online as well as hold discussions, tests and feedback sessions online. Some of these institutions also implemented regional centers where students were able to gain access to instructors stationed in those regional centers. Students were able to attend classes, face-to-face meetings or discussions with instructors and peers and also had one-on-one meetings with instructors to discuss course materials.

Some of these universities also brought in experienced and foreign trained instructors to provide international instruction practices to these institutions to align them to the global world. These foreign instructors were also able to expose and guide the locally trained instructors to the global world of instruction.

As a result enrollment rates increased and from survey responses, method of instruction, feedback received, communication and evaluation were all rated high. Overall, respondents were satisfied with the online distance education programs.

However there were still challenges that were revealed during the study. There was still the problem of frequent power outages that disrupted class sessions, access to campus computer labs, the internet and course materials. A solution for the frequent power outages could be derived from solar and wind energy. An energy sector review by Maame Esi Eshun and Joe Amoako-Tuffour revealed that Ghana has the potential to generate an average wind power of

2000 megawatts and an average solar power of 35 exajoules which is about 100 times Ghana's

present power consumtion. Ghana therefore has the potential to generate more than enough

electricy needed for consumption, (Eshun and Amoako-Tuffour, 2016). These institutions could

also build their own source of solar energy by securing funding and partnership with government

agencies as well as non governmental organizations and UN organizations for these energy

production projects.

Academic stoppages due to strikes by the locally trained instructors also posed challenges

to the institutions. A solution could be implementing a training program by sending these

instructors abroad to conferences and refresher training sessions to partner with other institutions

to gain exposure. The government could reward these instructors by providing stipends or salary

raises to help boost the morale of the instructors. Funding could also be secured with partnership

with government agencies as well as non governmental organizations and UN organizations.

This should go a long way to improve the image and experience of the locally trained instructors

as well as solving the strike issues and providing a smooth and consistent academic year.

Most importantly, even though infrastructure has improved with the implementation of

the various technology projects, as stressed in the administrator responses, measures need to be

taken to make sure these equipment and technology are maintained and frequently updated to

continue to provide the necessary services these institutions are providing as well as be able to

cope with the consistent and future demand.

A future study is the standardization of the online distance education program in Ghana.

Currently, most of the institutions provide and offer different implementations of the online

distance education program. More research could be done to identify best working practices and

use that to create a framework for online distance education in Ghana. Creating this framework

will provide a benchmark and starting point for all institutions in Ghana looking to implement an online distance education program. With Ghana considered a third world country and similar to other African and third world countries or communities all over the world, this framework could even be used as a benchmark in their implementation of online distance education program for environments similar to Ghana.

Overall through research and survey, the study was able to find out the status and challenges of online distance education programs in post-secondary insitutions in Ghana. The study identified various challenges that affected the implementation and utilization of online distance education programs in post-secondary institutions in Ghana and a future study of a framework of best practices for the implementation and utilization of online distance education programs in post-secondary institutions in Ghana.

APPENDIX

INSTITUTIONAL APPROVALS

UNT

Research and Economic Development
THE OFFICE OF RESEARCH INTEGRITY AND COMPLIANCE

April 25, 2016

Dr. Jeff Allen
Student Investigator: Stanley Adjabeng
Department of Learning Technologies
University of North Texas

RE: Human Subjects Application No. 16-113

Dear Dr. Allen:

In accordance with 45 CFR Part 46 Section 46.101, your study titled "The Status and Challenges of Online Distance Education Programs in Post-Secondary Institutions in Ghana" has been determined to qualify for an exemption from further review by the UNT Institutional Review Board (IRB).

Enclosed are the consent documents with stamped IRB approval. Since you are conducting an online study, **please copy the approved language and paste onto the first page of your online survey.**

No changes may be made to your study's procedures or forms without prior written approval from the UNT IRB. Please contact The Office of Research Integrity and Compliance at 940-565-4643 if you wish to make any such changes. Any changes to your procedures or forms after 3 years will require completion of a new IRB application.

We wish you success with your study.

Sincerely,

Chad Trulson, Ph.D.
Professor
Chair, Institutional Review Board

CT:jh

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GHANA EDUCATION SERVICE

Ministry of education
Ministries Road, Accra, Ghana
Tel: 030 2662977, 030 2223620, 030 2665534

November 11th, 2015

To Whom It May Concern

Dear Mr Adjabeng,

We have received your dissertation proposal to conduct a survey about the Status and Challenges of Distance Education Programs in Ghana Tertiary Institutions.

We have consequently granted your approval to conduct the surveys in the schools specified in your proposal.

Please note that any surveys to be conducted in other schools other than the institutions specified in your proposal will need a separate request, review and subsequent approval by the Ghana Education Service.

This letter therefore serves only as the approval for conducting your surveys in the specified tertiary institutions in your proposal. The findings of these surveys will also need to be shared with the Ghana Education Service.

We appreciate your service and contribution to the Ghana Education Service.

Sincerely

Honourable Minister for Education
Professor Naana Jane Opoku-Agyemang,

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