UNIVERSITY OF CAPE COAST

AVAILABILITY AND UTILISATION OF THE INTERNET BY GRADUATE STUDENTS OF THE UNIVERSITY OF CAPE COAST.

EBENEZER NARTEH ATTER

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BY

EBENEZER NARTEH ATTER

Thesis submitted to the Institute for Educational Planning and Administration of the College of Education Studies, University of Cape Coast, in partial fulfilment of the requirements for award of Master of Philosophy degree in Administration in Higher Education.

JULY 2016

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature…… Date ……

Name: Ebenezer NartehAtter

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature…… Date……..

Name: Dr. Mrs Rosemary Bosu

Co-supervisor's Signature…… Date……..

Name: Dr. Alfred Ampah-Mensah

ABSTRACT

The purpose of the study was to ascertain the availability and utilization of Internet by graduate students of` the University of Cape Coast (UCC) to facilitate their academic work. The descriptive survey was adopted for the study. Out of a study population of 1140, a sample size of 382 was selected but 321 respondents responded to the questions. The reliability test for the pilot study yielded .721 Cronbach's alphalevel. The statistical tools used for the data analysis were frequencies, percentages, means and Mann Whitney U test. Although the Internet was available and was distributed to the graduate students at vantage points on the university campus by the Computer Centre of the university, it was discovered that the Internet was unreliable and not easily accessible by the graduate students. This was due to erratic electricity power supply and very slow speed of the Internet. It was also found out that the graduate students always use the university's Internet to gather information to write thesis and assignments and to send and receive e-mails. Data from the interview conducted indicate that the state of the Internet infrastructure at the UCC was not of its best quality. Most of the Internet equipment was inadequate, obsolete and inefficient to meet the growing demand of Internet at the UCC. The study concluded that the Internet was available at the university and the graduate students were using it to enhance their research based programs on campus. Management of the university should raise enough funds through its alumni and private individuals to procure state of the art Internet infrastructure for the university.

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DEDICATION

To Dr. Alex Kwao and my loved one Elizabeth Ewusi

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CHAPTER ONE

INTRODUCTION

Background to the Study

The world has become a global village and therefore much is expected from the universities in terms of research, innovation, knowledge dissemination and creative teaching (Oye, Lahad& Rahim 2012). According to Diem (2007) the Internet has provided infrastructure for global economic development, helped produced knowledge based society, contributed to innovation and brought value to the world's economy. More importantly, the Internet brought the world closer by accelerating the dissemination of knowledge. Also, it improves research, stimulates innovation and facilitates collaboration (Diem 2007).

According to Oye, Lahad and Rahim (2012), globalization is the networking of the world through the global network. People around the globe are more linked to each other by the Internet than ever. Certainly, the use of the Internet is rapidly becoming inevitable and therefore knowledge, skills and infrastructure for efficient Internet service delivery have become necessary for contemporary education, commerce and industry. The Internet requires local, national and global networking to facilitate growth and development in societies (Oduro, 2013).

Modernization and the penetration of technology use in all aspects of human live has called for a good knowledge of the use of Internet by everyone around the globe, be they young or adult, male or female. This is to ensure that everyone fits into the new technology trend in society and also accelerate national growth and development. With the introduction of the Internet in

Ghana in early 1998, Ghanaians encountered totally different experiences with regards to participating in some social and economic activities (Mumuni, 2013). Ghanaians already have their own ways of doing things, however, participating in certain activities such as education, entertainment, buying and selling and communicating with others have all been greatly influenced with the introduction of the Internet.

According to Mumuni (2013) the last place one imagined the Internet would end up was the classrooms and lecture halls of our educational institutions. Although there are many classrooms in Ghana that are yet to be connected to the Internet, this skeptical assertion about the Internet ending up in the classrooms and lecture halls has gone down drastically. This was due to the significant role the Internet plays in contemporary education. For example the Internet has become a backbone for collaborative research work in universities worldwide.

According to Diem (2007) the Internet has empowered lecturers and learners, making significant contributions to learning and achievement. It changed education from institution-centric to learner-centric, from lecture hall-based to being extensively connected through wireless. The inception of the Internet has provided room for new classes of learners at the higher educational level: those who could not come to campus, or could not afford the university's fixed time frame and those who would want to have a tailored program for their specific needs (Mumuni, 2013).

Mumuni (2013) further posits that the Internet allows universities to have the flexibility in space, time, and content. As a result new course materials have been created or adapted by universities for this new delivery

channel for new learners and providers (professors, teachers, instructors or tutors). One most important impact of Internet is that majority of the universities have adapted a combined mode of training, merging both distance learning with on-campus learning. To add to the above, the development of Internet technology has created enormous opportunity for many universities to share their intellectual assets by putting their course materials on- line in order to be accessed by everybody mostly for free (Mumuni,2013).

In 1998, which marks the early days of the Internet in Ghana, its usage was restricted to government agencies, large businesses and a very few rich families (Mumuni, 2013). However, in many lecture halls in higher educational institutions today, the Internet is fairly dominant. Educational platforms like online educational videos, virtual classrooms, and access to a collection of research materials on the Internet, all provide a comfortable life time learning experiences for both students and lecturers. This, in its own context according to Mumuni, has redefined the traditional way Ghanaians perceive education.

Contemporary university education strongly demands the use of the Internet, therefore knowledge and expertise in Internet are required to increase productivity (Ogbomo&Esoswo, 2008). Over the years, knowledge about the Internet was not adequately utilized especially in developing nations because most countries did not have national policies on ICT and for that matter the Internet, (Oye et al, 2012).

According to Diem (2007), creating and disseminating new knowledge are major roles of higher educational institutions. It appears the Ghanaian society holds similar assertion to that of Diem (2007). This is because many

job advertisements on the Ghanaian job market for example, require university graduates to possess Internet skills.

However, it was not until 2003 that the ICT4AD PolicyCommittee was tasked to develop an ICT policy for socio-economic development, calledthe ICT for Accelerated Development (ICT4AD) Policy. The policy among others strives for Internet usage across the educational ladder in Ghana. It also emphasized an ICT and for that matter, Internet driven socio-economic plan capable of transforming Ghana into knowledge based society. This is envisioned to move the nation towards development within the shortest possible time. Key stakeholders are the government, private sector and civil service (Ministry of Information and Communication, 2003).

The 2003ICT 4AD Policy, has among its objectives, to use the Internet, to speed up the process of development of national human resource capacity and the nation's research and development capacities. This is to meet the varying needs and demands of the Ghanaian economy. Again, the policy aims at promoting an enriched educational system within which Internet facilities are widely deployed to facilitate the provision of educational services at all levels. Finally, the policy aims among other things to facilitate the development of women and do away with gender inequalities in education, employment, decision making through the utilization and manipulation of ICT facilities and the Internet. These, according to the policy, will be achieved by building capacities through schools and providing opportunities for girls and women.

According to Kwarteng, Boadi-Siaw, and Dwarko (2012), the use of ICT facilities at the University of Cape Coast began with a policy that had been developed by the university library Director in 1999 to acquire

supporting research materials in all subjects to promote postgraduate work. This policy according to Kwartenget al led to the acquisition of modern ICT facilities and materials including Internet facilities and equipment which have been installed in the University Library Complex since 1999. This was done to give greater support to research work atthe University of Cape Coast.

Muller and Tredoux (2008) argue that the Internet holds much potential for use in curriculum delivery. Thus, technology can efficiently improve teaching and learning capacities, hence increasing learners' performances. Castro (2003) and Cawthera (2000) posit that, the Internet has the means to facilitate the preparation of learners. This is because the Internet improves information access and collaborative research. Similarly, Hardman (2005) argues that placing this new technology in schools could help avert the deepening academic crisis. Internet integration in education will enable shifts from the traditional pedagogical practices and thus potentially benefit students' learning. The integration of the Internet in pedagogical practices especially in Higher Educational Institutions makes teaching and learning more interactive and interesting among graduate students (Hardman, 2005).

Larbi (2008) explains thatalthough there was high availability of Information and Communication Technology facilities at the University of Cape Coast, few computers are connected to the Internet hence there was low availability of the Internet campus.Larbiposits that people who needed the services of the Internet had to access them from other sources such as the commercial cybercafé around the university.Larbifurther revealed that usage of the Internet for research was low in respect to collective academic and collaborating research

Again,Larbi (2008)revealed that theInternet service on campus appears unreliable. It comes with a low speed and it was available only at few access points on campus. Conspicuously, students are seen crowded at these few vantage points of the university campus struggling to connect to the Internet (Larbi, 2008).

There are a number of learner-specific motivational attributes that can be associated to the use of the Internet in education. These include higher commitment to the learning task, enhanced enjoyment and interest, increasedself-esteem and increase in independence and confidence (Cox, Preston & Cox, 1999). According to Newhouse (2002), computer-supported learning environments could be more beneficial, for example to the Constructivist teaching approach. The Constructivist Theory by Bruner (1973) emphasizes that teaching is based on the believe that learning occurs as learners are actively involved in a process of meaning and knowledge construction as opposed to passively receiving information. Constructivist theory of teaching creates motivated and independent learners. This theoretical framework holds that learning always builds upon knowledge that a student already knows. This is called the schemata. The learner selects and transforms information, constructs hypotheses and makes decisions relying on a cognitive structure (schema and mental models) that provide meaning and organization to experiences. As far as instruction is concerned Bruner posits that the instructor should encourage the learner to discover concepts and principles by themselves and both the instructor and the learner should engage in an active dialogue.

According to Newhouse (2002), one of the most significant components of the constructivism theory of learning is the concept of proximal learning. The theory accepts that a learner constructs his/her own knowledge for which scaffolding is initially required. According to Wood and Middleton (1975), scaffolding represents any kind of support that promotes learning and students' performance beyond their capacities. Newhouse further explains that, the scaffolding could be provided by a tutor or computer. Thus, the Internet technology can be used to help create the types of learning environments and the types of support for learning that are known to be ideal. These are argued to have been ignored or failed to be widely implemented in the past (Newhouse). However, the extent to which the Internet supports graduate students' learning at the University of Cape Coast remains an issue to uncover.

The importance of applying the Internet to graduate studiesat the University of Cape Coast can more often be seen in the positive outcomes when Internet knowledge and services are made available to graduate students to be employed especially in their thesis research work. The use of the Internet helps graduates to access information and share works that have been done by other research individuals and bodies (Dadzie, 2005). Again, technology helps to overcome the limitation of time and space (Bosu, 2000).

According to Kwafoa, Osman and Afful-Arthur (2014)it is relatively cheaper for the graduate student to access soft copies of books on the Internet than buy the hard copies of such books.Kwafoaet al further indicate that, even in most cases access to some hard copy books appear to be very difficult.

Cox et al (1999) have shown that there are a wide range of factors which influence educators' and learners' under- utilization of Internet in their teaching and learning process. In the University of Cape Coast for example there are limited access to Internet resources, poor quality of software and hardware and inadequate technical support (Kusi, 1999). Over a decade and half after Kusi's study, this study also seeks to find out if the findings remain the same or there has been improvement in Internet availability and utilization at the University of Cape Coast. For many computer users in the University of Cape Coastwho may have the Internet resources at their disposal, lack of self-confidence, wrong attitude and perceptions in using the technology is observed to be a strong limiting factor to its utilization (Kwafoa, Osman, &Afful-Arthur 2014). It is against this background that I deem it appropriate to carry out this study to come out with a further scientific analysis about the availability and utilization of Internet by graduate students ofthe University of Cape Coast.

Statement of the Problem

The issue of adequate availability of theInternet facility atthe University of Cape Coastover the years has been a worry to many students of the university. In spite of the growing global demand for the use of Internet in contemporary education,Acheampong (2012) conducted a study at the University of Cape Coast to assess Internet usage by undergraduate students of the university and revealed that the limitedInternet facility at the University of Cape Coastwas more tilted to administrative use than lecture halls and students' halls of residence and hostels where the students study. Again, the study indicates that although majority of the undergraduate students have personal computers, they rarely used them to access the Internet to enhance

their academic work. Only 25% of the undergraduate students used the Internet to access online journals and electronic textbooks for their studies. The extent to which this condition also prevails among graduate students of the University of Cape Coast is unknown. It is likely the findings of Acheampong(2012) also prevails among the graduate students of the university. This research therefore seeks to ascertain the availability and utilization of the Internet facility by graduate students of the University of Cape Coast.

Purpose of the Study

The purpose of this study was to ascertain the availability and utilization of Internet facility by graduate students of` the University of Cape Coastto facilitate their academic work.

Research Questions

1. How is the Internet available to graduate students of the University of Cape Coast?
2. In what ways do graduate students of the University of Cape Coast use the Internet?
3. What is the state of theInternet infrastructure at the University of Cape Coast?
4. What are the difficulties that confront graduate students of the University of Cape Coast in using the Internet?

Hypothesis

H_o: There is no statisticallysignificant difference between male and female graduate students' usage of Internet at the University of Cape Coast?

H_1: There is statisticallysignificant difference between male and female graduate students' usage of Internetat the University of Cape Coast

Significance of the Study

The need to understand how graduate students and for that matter students in general use the Internet on the various university campuses should be of primary concern to researchers, parents, educationist, civil society groups, university administrators, Ministry of Education (MOE) and the Ghana Government in general.

To the graduate students, the study will help them tobring to light thechallenges they face in using the Internet. This will attract the attention of the university authorities and other stakeholders for possible solutions.

Againto the university authorities, findings of this study will serve as a source of feedback as to whether graduate students of the university use the Internet to facilitate their academic work. Moreover, the study will bring to light, how the Internet is distributed to graduate students on campus and the current state of theInternet infrastructure at the University of Cape Coast. This may help bring about review of existing Internet policies that would intensify the usage of Internet at the University of Cape Coast to promote academic work. Finally,the findings of the study would produce literature on the utilization of the Internet for future research work. The researcher intends to communicate the findings of this study to the graduate students, the university

authorities, the school of graduate studies through seminars and the mass media.

Delimitation of the Study

This study was confined to the University of Cape Coastonly. This was because in its 2012-2017 corporate strategy the university has based the achievement of its objectives on Information and Communication Technology (ICT). As per the corporate strategy, the university will ensure that the Internet was connected tostudents' hall of residents and that the university must prepare its students to become leaders in an economy driven by globalization and technology. Three years into the launch of the corporate strategy this study seeks to ascertain how the university has made the Internet, which is an essential tool for contemporary university education, available to students of the university.

Among the students as a unit of the study population, only regular graduate students were involved in the study since the research cannot capture all students on Sandwich, Distance and Regular programs. This was because the study specifically sought to find out the availability and utilization of the Internet at the University of Cape Coast campus. This required students who stay on campus and use the Internet for their academic work. Other categories of students such as the Sandwich and Distance Education students, by the design of their programs do not regularly stay on the University of Cape Coast' campus for their academic work hence may not be well abreast with the issues involved in the study.

The study was further delimited to graduate students because Acheampong (2012) found out that the limited Internet infrastructure at the

University of Cape Coast was more tilted to administrative use than lecture halls and students hostels. Again, the study indicated that although majority of the undergraduate students have personal computers, they rarely used them to access the Internet to boost their academic work. Only 25% of the undergraduate students used the computer to access online journal and electronic textbooks for their studies. The researcher therefore seeks to replicateAcheampong's study to ascertain the availability and utilization of the Internetby graduate students of the University of Cape Coast. The study was further delimited to the Internet because graduate studies is primarily research based and the Internet is an indispensable tool in this regard.

Finally, the study was restricted to the years one and two graduate students of the University of Cape Coast. This was done to further reduce the scope of the study.

Limitations

The researcher intended to do an observation to ascertain the actual state of the Internet infrastructure and facilities at the University of Cape Coast. However, the observation was not done because the researcher was not granted access to the Internet facilities. Data from the observation could have providedfurther information on the state of Internet infrastructure at the University of Cape Coast. This could have made the finding of this studyricher.

Again the second years both master's andPh.D. students did not dominate the study because at the time the data was being collected most of them had travelled to the field to also collect data for their research work. Input from them could have made the findings of this study richer if they had

dominated the study. This is because the second years both master's and Ph.D. students stayed at least a year longer on campus and might have used the Internet provided by the University of Cape Coast for quite longer time than the first years. However,those who were available were contacted to participate in the study.

Definition of Terms

Graduate students; this refers to students who are pursuing second degree and doctor of philosophy (Ph.D.) programs.

Internet utilization; It refers to the purpose for which, how skillful and frequently, Internet technology is employed for academic purposes by graduate students of the University of Cape Coast.

Internet availability: This is concerned with the present of Internet services, infrastructure and how they are distributed at the University of Cape Coast.

Internet; It is a global system of interconnected computer networks that use protocol suites to link devices worldwide.

Organization of the Study

The entire study comprised five chapters. These chapters were organized as follows;

The Chapter one was made up of the introduction to the study. In this chapter, the background of the study, the statement of the problem, purpose of the study, research questions, delimitation of the scope of the study, limitations of the study, significance of the study and organization of the study were covered.

Chapter Two discussed the relevant literature related to the study as well as the theoretical framework and conceptual review that were adapted for the study. It pointed out writings of vested authorities in related areas of the study. Chapter Three also discussed the methodology that was used for the study. It comprised the research design, population, sample and sampling procedures, research instruments, data collection procedures and data analysis procedures. Chapter Four focused mainly on the result, presentations, analyses and discussions of the data that were collected for the study. Chapter Five summarizes the major findings as well as conclusions and recommendations of the research.

Chapter Summary

This chapter captured the purpose of the study which was to ascertain the availability and utilization of the Internet by graduate students of the University of Cape Coastto enhance their academic work. It also aimed at establishing whether there was significant gender difference in utilization of the Internet by graduate students of the University of Cape Coast. The background to the study and statement of the problem captured in this chapter provides strong grounds to back the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

This chapter examines pertinent themes to the study to set the scene and the conceptual framework for backing the purpose and research questions for the study. The essence of literature review is partly to provide framework, which will constitute the basis for drawing similarities, differences and or conclusions among findings of other studies. Again, it will not only help clarify the problem to be studied but also delineate some of the variables that influence Internet utilization. It also guides the researcher in the selection of methodology for the study. There seem to be no much research conducted on the availability and utilization of Internet by graduate students of the University of Cape Coast. As a result, studies in other areas both within and outside Ghana on the availability and utilization of the Internet by graduate students and other essential information related to the subject was revised to put the work in proper perspective.

According to Merriam cited in Frempong (2011), designing literature of a study is not merely a linear or process of reading or identifying the literature, but a highly interactive process of finding out how previous researchers looked at the problem. Frempong attests that a commanding knowledge of previous literature builds a point of reference. Merriam cited in Frempong posit that there is a need to show that the current study is urgent and important and will advance the knowledge base in this area.

The chapter presents five relevant issues from the literature. They encompass the availability and utilization of educational technology in higher educational institutions, Internet access and utilization by university graduates, acceptance and utilization of Internet by universities, gender differences in the

utilization of Internet and finally challenges associated with the utilization of the Internet in higher educational institutions.

Availability and accessibility of Educational Technology in Higher Educational Institutions

According to Bosu (2000), effective planning, organization and administration means the effective management of facilities and resources. Bosu further explain that technological facilities in higher educational institutions have to be made available and accessible before they are utilized. The availability of Internet facilities refers to whether the Internet facilities are in place for use by the students.

Bosu (2000), explains that accessibility of educational technology is more related to the "right" to use or the ability to reach or get hold of the available technology for use, in this instance the Internet. The problem is therefore how accessible a particular technology is for learners and how flexible it is for the target group.

Accessibility becomes a benchmark for deciding if the technology is to be used or not. According to Bosu (2000), the availability and accessibility of educational technology facility such as the Internet in a higher educational institution can be looked at from three main viewpoints. Firstly, it can be viewed in terms of its being available and accessible as a course of study. Secondly, it can be seen as an effective approach that educators and educational administrators can adopt for solving educational problems. The third view is that of availability and accessibility of different types of the technological equipment and facilities (Bosu, 2000).

Secondly, the Internet facility can be seen as an effective approach that educators and educational administrators can adopt for solving educational problems. The introduction of on-line distance education is an example of using the Internet technology to solve educational problems and also meet the needs and aspirations of individuals pursuing higher education. At the University of Cape Coast, the College of Distance Education (CoDE) has from the 2014/2015 academic year mounted the e-learning platform for its students and working personnel. This will enable students on the Distance Education programme at the University of Cape Coast easily access course materials, register their semester courses and interact with their course tutors and administrators regardless of their geographical location (Oduro, 2013). The Internet facility ensures independent learning and also brings education especially higher education to the door steps of all who wish to access it. On-line learning depends largely on the Internet and it permits learners to have access to a wide range of educational resources (Bates, cited in Bosu, 2000).

The third view is that of availability and accessibility of different types of educational technology equipment Bosu (2000). The University Rationalisation Committee (1988), reported that the availability of educational resources and support services, and for the purpose of this study, Internet resources have become very inadequate in higher educational institutions in Ghana. However, the US National Center for Education Statistics NCES (2010) indicated that nearly 100 percent of Universities in the United States now had access to the Internet. This report paints a complete picture of improvement of the availability and accessibility to Internet equipment in US higher educational institutions over the years.

According to the NCES (2010) a lot of researches in recent times are centered on the use of computer networking and the Internet in the educational system. The Internet enables researchers to get access to research materials of all kinds and also share the work of other authors. In the school environments, the Internet links a lecturer to his students and students and their colleagues. Once they have Internet connectivity the lecturer and the students need not necessarily be at the same place or lecture hall before teaching and learning can take place. They can communicate through the electronic mail or the Internet. The electronic mail is used to send information (in the form of words, illustrations or pictures) from one person to another using the computer. The Internet allows access to a vast amount and variety of information on its websites. The web sites have addresses where various issues are discussed and some sites also give learners access to books or journals.

One of the aims of the University Rationalisation Committee was to assess the use of technological facilities for both academic and non-academic purposes. After its assessment, it recommended that higher educational institutions in Ghana needed to increase the level of technology utilization. Also, the committee recommended that additional ICT facilities are needed for the growing present and future students population (University Rationalisation Committee, 1988).

Factors that Affect the Availabilityof Internetin Higher Educational Institutions

While Macharia and Nyakwende (2009) identify environmental factors such as competition pressure, government support, Internetvendors' support and perceived socio-economic factors as the issues that influence the adoption and diffusion of the Internet in a higher educational institutions. Similarly, (Bosu, 2000) explains that the availability of a technology in a higher educational institution is largely dependent on a number of external and internal factors such as political power, economic condition and users' perceptions.

Political Power

Political power, according to Bosu (2000) can determine the availability and utilization of technological facilities, in this instance the Internet in a university. Bosu maintains that a particular group such as a government or the university authority controls what is used in the university. Khati (1998) in his paper delivered on the topic *Political Influence; A Culture of University Decision Making,* agrees with Bosu (2000) that political power can determine the availability and utilization of technology in higher educational institutions. Khati(1998) explains that higher educational institutions which were established maintained and aided by the government in socio-economically and educationally least developed countries have come under the direct scrutiny and supervision of governments. Khati further maintains that universities created by Acts passed by the legislature and supported by government funds, are often financially and politically controlled by the government.

Khati (1998) further argues that besides appointing the chief executive of the university, the government controls the administrative and decision-

making power of the university hence they can promote the usage of technological facilities. For example in the year 2012, the government of Ghana, through the Ministry of Education promoted the utilization of ICT by distributing laptops to students and teachers from the Basic School level through to the university level. Today, some teachers and students across the educational ladder in Ghana who hitherto do not own or manipulate personal computer now can do so to some extent.

According to Livingston (2000), there are some opinions that support the practice of political control over the administrative and decision-making affairs of the institutions of higher education. These opinions are based on the argument that the organizations with some type of political control can progress more easily toward the attainment of their goals. Livingston attaches political influence in the decision-making process of the university into two sources: political figures and the government. The former consisting of elected officials, educated politicians and boards of education, and the latter comprising central and local government bodies. The former has the power and influence to set institutional goals, policies, and overall guidelines; whereas the latter influences the means and resources of the institutions.

Bergquist (2002) stated that the structure of a university organization is such that the higher-level decision-making authority is in the hand of a chief executive of the institution. It is bureaucratic internally, but under great control externally. Macharia and Nyakwende (2009) explain that the rationale for government support to technology diffusion rests on influences of market and systemic failure.

OECD cited in Macharia and Nyakwende (2009) argue that governments also support technology diffusion to increase returns from public investments and to enhance institutional and industrial competitiveness. Government technology diffusion initiatives in OECD countries have evolved from programmes to transfer specific technology embodied in equipment and related know-how to enhancing the ability of institutions and firms, especially small and medium-sized enterprises, to absorb technology and increase performance (OECD cited in Macharia and Nyakwende (2009)). The findings of Machariaet al suggests that there are various types of possible support that may be provided at the environmental context level by government such as tax incentives for ICTs and premium rates for Internet bandwidth for higher educational institutions. The findings further suggest that providing these types of support may lead to greater Internet use and more effective learning by students. Effective government support requires both the necessary policies and laws to provide adequate ICTs facilities for students to access the Internet, and a supportive macro environment or culture that encourages Internet use as part of higher education. Thomas and Kobayashi cited in Bosu (2000) further concluded that when a new technology is used on a rather massive scale, the underlying motivation is most often political.

Economic Condition

Womboh (2008) pointed out that the harsh economic conditions and governments apathy to Internet services in universities badly affect the use of Internet. As a result, Womboh noted that the content and quality of services of most university libraries have deteriorated to such a level that the quality of products of such universities has also been adversely affected.

Funding of higher education all over the world has become an albatross on the necks of many governments especially governments in developing countries like Ghana. However, education, if looked beyond its conventional boundaries, forms the very essence of all our actions and what we do is what we know and have learned, either through instructions or through observation and assimilation (Combs,1970).

Receiving a good education helps empower learners, thus making them strong enough to look after themselves in any given situation.

According to Combs (1970)

> *... No longer was education seen merely as a 'non-productive sector of the economy which absorbed consumption expenditures, it was now viewed as an essential 'investment expenditure for economic growth. Education could make a more effective claim on national budgets…(pp. 22).*

Therefore investment in human capital is an important path to development especially in third world countries like Ghana. According to Combs (1970) low levels of human capital are widely considered to be a major impediment to economic growth and eradication of poverty in many Sub-Saharan African countries. In recent times, the recognition of the importance of human capital development has led many governments to invest a lot of resources into higher education in their endeavors to boost economic growth through development and accumulation of human capital. It is therefore important for governments to put in place measures to ensure that a lot more is done to promote quality higher education in whatever emerging forms it takes for the benefit of society.

According to Akora (2011) although successive governments in Ghana have acknowledged the need for the integration of emerging technology into the training of critical skills providers in fields such as teaching, engineering, medicine, and accounting for rapid socio-economic development, they often complain about the cost of providing higher education and their inability to act as the sole financier of tertiary education due to economic and budgetary constraints coupled with the fact that, there are equally important sectors of the economy that need to be catered for. Akora (2011) further explained that the government of Ghana has clearly stated its inability to act as the sole financier for tertiary education. This position taken by government brings huge financial burden on higher educational institutions in providing state of the art facilities that enhance teaching, learning and research and meeting emerging trends in delivering higher education.

Johnestone cited in Akora (2011) explains that low income earning countries, such as Ghana that are still trying to change from 'elite'to mass tertiary level participation in education and at the same time trying to become more economically competitive in the global economy usually suffer to absorb the pressure for the high demand for the provision of Internet infrastructure for higher education .

The worsening global economic condition usually compels governments to adopt austerity measures in their respective countries (Johnestonecited in Akora (2011). Some of these austerity measures usually include removal of subsidies on utilities and drastic cuts on subventions to public institutions including higher educational institutions. The consequential effect of all these austerity measures on higher educational institutions is

drastic reduced funding to higher educational institutions hence government financial support for technology integration dwindles drastically. This affects the availability and utilization of Internet facilities in higher educational institutions.

According to Afshari, Mojgan and Kenayathulla (2012) effective leadership, organizational culture, individual factors and support mechanisms affect the availability of Internet in universities.

Effective Leadership

According to Afshari, Mojgan and Kenayathulla (2012) effective leadership is critical in making the Internet available in universities.Flanagan and Jacobsen (2003), also believe that effective leaders encourage university teachers to use Internet as a tool to support the learning such as skills for searching and assessing information, cooperation, communication and problem solving which are important for the knowledge society. Branigan (2004) stated that an effective leader needs to have the ability to develop and articulate a clear and common vision for technology use in contemporary education; and the ability to change and manage change. Without a shared vision for e-learning and a clear strategic plan, implementation programs can be slow and difficult. A leader should be knowledgeable, competent and supportive about e-learning in order to implement an e-learning.

Anderson and Dexter (2005) believed that leaders not only should learn how to manipulate the Internet and use it, they also should ensure that other staffs in the school receiveInternet learning opportunities. Furthermore, they added that leaders should assess and evaluate academic and administrative uses of technology and make decision from those data.

Therefore, it would seem that educational institutions should define clearly their Internet policy and goals, have a detailed development plan and strategy to motivate teachers and students to utilize Internet in their teaching and learning process.

Organizational Culture

Organizational culture is a critical factor in the success of any organizational innovation. According to Tushman and O'Reilly, cited in Martine andTerblanche, (2003), the basic elements of organisational culture (shared values, beliefs and behaviour expected of members of an organisation) influence innovation through socialisation processes in organisations. During this process, individuals learn what behaviour is acceptable and how they should perform activities. In this way, norms are developed, accepted and shared by individuals. "The basic values, assumptions and beliefs become enacted in established forms of behaviours and activity and are reflected as structures, policy, practices, management practices and procedures". (Tushman and O'Reilly, cited in Martine andTerblanche, (2003).

Based on above explanations, it can be concluded that leaders should use strategies to develop a culture that values e-learning and improve the effectiveness of e-learning practice. Leaders should build e-learning into regular employee milestones; promote the e-learning initiative in e-mails, newsletters and use a familiar interface and focus on the desired result, and acknowledge employees who complete significant courses and rewarding them publicly or privately (Stuart, 2004).

Martine and Terblanche (2003) introduced a model and identified five dimensions of organizational culture (strategy, structure, support mechanisms,

behaviour that encourages innovation and communication) that have an influence on the degree to which innovation takeplace. Each of these determinants is discussed to describe their influence in promoting or hindering e-learning practices in educational institutions.

Institutional Strategy

According to Masoumi and Lindström (2012), effective diffusion of Internet in an educational institution is largely influenced by explicit institutional visions and goals (long-term aims that guide current practice) and a well-defined mission and strategy that describes technology's place in education. In other words, a vision gives a place to start, a goal to reach for, as well as a guidepost along the way" (Ertmer, 1999, p. 54).

Kortecamp and Croninger (1996) introduced several strategies for producing successful change in organization and categorized them in three groups: The first group (i.e., establishing urgency, creating a guiding coalition, developing a vision and strategy, communicating the change vision) is designed to create a change environment and to overcome the existing status quo. The second group (i.e., empowering broad based action, generating short term wins, consolidating gains and producing more change) is designed to generate new methods of operating to support the implementation. The final group involves the process of institutionalising the change and making it a part of the organisational culture.

Therefore, development, articulation, and implementation of the university's vision of e-learning that promotes maximum knowledge, skills, and dispositions for every graduate student is very important. Goals, daily activities and strategies, resources, budgets, curriculum, instruction,

assessment, and staff development should be align with the e-learning vision. Leaders of the university should develop specific and targeted plans to enhance their skills in working with and motivating university teachers to use e-learning effectively in their teaching.

Organizational Structure

According to Martine and Terblanche, (2003) organizational culture has an influence on the organizational structure and operational systems in an organization. There is shift from traditional university structure (lecture based of delivery) into technology assisted learning such as Internet based learning and this calls for lecturers, students, managers, policy makers to accept the need for the changing landscape of higher education. According to Adams and Seagren,2004 if an organization believes that the Internet can surge institutional reputations, improve teaching and learning quality, and provide more flexibility in student learning, these beliefs will influence and change the organization structure and role of the university and goals of graduates.

According to Fleron (1977), implementation of a new technology such as the Internet is not finished with its installation and explanation of how to use it. In fact, the new technology should be accepted by the receiving society (Asemi, 2006). Lecturers, students, managers' cultural perceptions toward e-learning programs are key factors related to both the initial acceptance of this program as well as future behavior regarding their usage (Afshari et al., 2010). Therefore, schools and universities should understand difficulties associated with changing structure of the institutions fundamentally.

Support Mechanism (reward and availability of resources)

According to Brzycki and Dudt (2005) administrative support is a critical factor in effectively making the Internet available. Bosley and Moon (2003) reported that support at senior management level for implementing new practices and addressing financial implications where appropriate; involvement of several members of staff; fostering culture within institutions of collaboration and mutual support; and willingness to take risks are crucial factors for technology integration in higher educational institutions. . Similarly, Gilbert (2000) found that adequate time for users to learn and practice the new skills; administrative support, technical support and incentives can be predictors of effective technology use in teaching and learning. Similarly, Brzycki and Dudt (2005) emphasized on the crucial role of leaders in the successful implementation of educational innovations and added that leaders should provide multiple forms of support , rewards and incentives; tie incentives to desired outcomes; supplement technical support with peer support and well trained student assistants, cultivate strong administrative support; involve faculty in decision-making to secure buy-in, and use faculty models to increase the rate of technology adoption in the university.

In addition, Buchan and Swann (2007) identified resources as an important part of technology implementation. Adequate resources refer to the availability and accessibility of resources needed to implement the innovation. These resources comprise the existing infrastructure as well as an organisation's finances, hardware, software, materials, personnel, and support structures (Buchan et' tal). Ali and Ferdig (2002) found that many institutions still struggled with the cost of keeping technology up-to-date such as for lab updates, improved networks, web-based course software, and video/data

projection. Adams and Seagren (2004) identified the availability of educational software, instructor computers, and student computers as barriers to integrating Internet into teaching and learning in higher learning institutions.

Rogers (2003) stated that characteristic of an innovation as perceived by individuals in a social system affect the rate of adoption. Also, he identified five innovation attributes that may contribute to the adoption or acceptance of an innovation: relative advantage, compatibility, complexity and observability. For example,Afshari, Mojgan and Kenayathulla (2012)found that the Internet attributes were significantly correlated to principals' level of Internet use. Afshari's study accentuated the importance of Internet attributes in the process of Internet adoption in developing countries. Also, Dillon and Morris (1996) stated that innovations that offer advantages, compatibility with existing practices and beliefs, low complexity, and observability will have a more widespread and rapid rate of diffusion. Therefore, if managers and lecturers perceive the Internet as a beneficial tool, compatible with their current activities, and easy to use, they will demonstrate positive attitudes towards the Internet and use it.

Individual Factors

According to Salmon and Jones (2004), personal, university policy and practices, technological and pedagogical factors influence instructors' attitude to use the Internet. Similarly, Matuga (2001) stated that the successful design and teaching of any course hinges on the personality, educational philosophy and pedagogical style of the instructor. Lecturers' personal will and attitude towards the use of technology in teaching are a crucial element in the use of

the Internet (Campbell, 2001). Hence, lecturers should change their attitude to adopt an online mode of teaching (Mehlinger, 1995). Moreover, Rogers (2003) stated that lecturers' personality traits are an indicator of their attitude to change. Those who are proactive in solving their own problems, independent, risk takers, confident and adventurous are more likely to be self-motivated, and respond quickly and positively to the Internet innovation than those who are more cautious, conservative instructors (Mehlinger, 1995).

According to Murray and Campbell (2000), the most important reasons behind active resistance to Internet integration into teaching practices are anxiety, and incompetence (lack of skill and knowledge). Lecturers, who have not trained to teach in non-traditional lecture halls, are unfamiliar with interactive and individualized nature of e-learning; they will not have the required skills to confidently create an exciting and challenging online learning environment. It would seem that this lack of competence and confidence in using new technology for teaching will create a certain level of anxiety.

Furthermore, online education changes instructors' roles and responsibilities (Yang &Cornelious, 2005). In an online learning environment, they should play as a facilitator and a learning catalyst. They should help students to select and filter information, to provide thought-provoking questions, and to facilitate well-considered discussion (Yang &Cornelious, 2005). Moreover, Muirhead(2000) stated thatinstructors in an online learning environment should provide instructional, emotional, and technological support to students. According to Fox and Mackeogh (2003), lecturers pedagogical approaches such as debates; simulations or games; role plays;

case studies; discussion groups; transcript based assignments; brainstorming; nominal group techniques; forums; and research projects can give all participants an opportunity to take part in the interaction and can enhance students' learning outcome in an online learning environment. Koohang and Paliszkiewica (2013) reported that when students learn collaboratively or under problem-based scenarios in an online environment, their critical thinking skills will increase and they will learn deeply the concepts.

According to Ronteltap and Eureling's (2002) when students are learning in a problem-based practical learning they collaborate more effectively and learn more actively. Hence, integrating collaborative learning, reflective learning, deep learning, problem-based learning, and project based learning methods into instruction is crucial for instructors to improve the quality of online education.

Daugherty and Funke (1998) stated that student motivation to learn, self-disciplined, accountability, and good time management skills are important factors in the successful use of e-learning. Therefore, students benefit most when they have a positive and active learning attitude and take responsibility for their own learning. Students' lack of technical knowledge and skills can hinder their use of the Internet (Jones, Packham, Miller, & Jones, 2004). Therefore, lecturers and students' competency in using the Internet, their attitudes towards e-learning systems and their personality traits play an important role in successful implementation of an e-learning program.

The use of Electronic Resources in Universities

According to Bola, Olaniyi and Oyekorke (2012) university education is geared towards the development of a complete intellectual, capable of independent learning and research. Prior to the use of Information and Communications Technology (ICT) for acquisition, processing and dissemination of information, university research, teaching and learning were limited to information due to materials available to students' institutions library or by extension, those materials made available through inter-lending. However with globalization through the Internet, Carbo (2003) explained that the world is shrinking resulting to immediacy of information. Thus, multimedia resources can be created, and information can be communicated promptly. The mode of obtaining and disseminating information for university education changed from physically available prints to e-materials with virtual reality.

As a result of that Agboola (1993), pointed out that any attempt to have meaningful academic communication can be successful only by the use of Internet which presents information in real time and space. Diem (2007) explains that the outcome of innovation can be measured through four main key performance indicators: revenue growth, market share, profit (or balanced budget in the case of government) and productivity (efficiency) and the role of higher education in this process cannot be overemphasized. Higher educational institutions do not only create and disseminate knowledge, they also apply knowledge to social and business challenges. Furthermore, they coordinate research in an eco-system of innovation that can validate the three critical success factors for research: quality, pertinence and sustainability and in all these processes and outcomes, the Internet plays the determining factor.

According to Kwafoa, Osman, and Afful-Arthur (2014) university libraries over the past few decades have evolved in their quest to continue to play a vital role in ensuring quality education and research. With the dawn of Internet and the web, electronic resources have become a generally accepted academic resource for both students and University administrators. Technological advances have brought about fundamental changes in the way modern organizations and institutions operate, and university libraries in this regard are no exception. The Internet has influenced the way universities gather, store, organize, retrieve and disseminate information (Sharma, 2009).

Due to new storage media and new channels for transmitting information, electronic libraries have become vital to the complete formation of any university (Tomescu, 2009). The Internet has greatly affected scholarly communication because of its potential to deliver goods and services to a large target market irrespective of their geographical location (Egberongbe, 2011).

As stated by Sharma (2009) the Internet has become indispensable in ensuring efficient information retrieval and dissemination which has become of prime importance to contemporary university education. Emerging technologies have changed the traditional library into automated, electronic, virtual and digital library (Saeed& Sheikh, 2011). It has also transformed most traditional university libraries into hybrid libraries storing most of their resources in both print and electronic formats. These libraries seek to complement the shortcomings of both traditional and electronic libraries in order to meet the demands of their customers. As rightly stated by Wu (2005) libraries asinformation brokers cannot reject information because of its format

of transmissionbut rather they must seek to harness its strengths and educate users on itsweaknesses.

According to Dadzie (2005), electronic resources are invaluable resources that complement print based resources. They have also been shown to be very helpful, especially, to post graduate students and distance learners who may have limited access to library resources in traditional formats (Egberongbe, 2011; Sharma, 2009).

According to Kwafoa, Osman, and Afful-Arthur (2014) the University of Cape Coast has been part of the Consortium of Academic and Research Libraries (CARLIGH) in Ghana which has been responsible for subscribing to electronic resources on behalf of both the public and private universities in the country since 1998. On the average the University of Cape Coast contributes ten thousand dollars US$10,000.00 annually to the subscription of these databases. However, patronage of these electronic databases are generally considered to be low, this is because most students and members of faculty are either unaware of the availability of the electronic databases in the Library or are just not interested in them.

Kwafoa e' tal further stated that the importance and significance of electronic resources such as the Internet, to teaching and research is extensively recognized by many researchers. According to Schaffner (1994), journals play a vital role in scholarly community, as it serves the overall purpose of building a collective knowledge base, communicating information, validating the quality of research, distributing rewards and building scientific communities. Numerous academic institutions in Ghana are currently building substantial collections of full text online journals and continue to increase

access to various online databases. Through CARLIGH many of these institutions are able to subscribe to online journals and databases at much more economical rates as compared to individual subscription.

Availability of Internet in Higher Educational Institutions

The US National Center for Education Statistics NCES (2010) conducted a survey to track the changing trend in computer and Internet availability in Universities in the US. The survey was based on benchmarks such as student–to-computer ratio and the percentage of universities and lecture halls with Internet connections.

The purpose of the study was to find out university Internet connectivity including lecture hall access to the Internet and types of Internet connections, students' access to computers and Internet, including student–to-computer ratio and laptop computers available for loan to students. The study further looked into the use of Internet access to provide various opportunities for teaching and learning.

The survey on Internet access solicited information on key measures of university Internet connectivity. The universities were asked if they had access to the Interne and the number of lecture halls that had at least a computer with Internet access and the types of Internet connections they had. Also, information on the number of lecture halls with Internet access was brought together with information on the total number of lecture halls in the university to calculate the percentage of lecture halls with Internet access.

The findings of the study indicated that nearly 100 percent of universities in the United States had access to the Internet. This was in variance with 35 percent Internet access indicated by NCES (1994). In 2005,

no significant differences in University Internet access were observed by any university characteristics. This was in line with data reported by NCES (1994). There have been nearly no differences in university access to the Internet by university characteristics since 1999 (Parsad& Jones 2005). Public universities have made constant progress in expanding Internet access in lecture halls. The survey indicated that, 94 percent of public university lecture halls had Internet access, compared with 3 percent in 1994. Across University characteristics, the percentage of lecture halls with Internet access varied from 88 to 98 percent.

According to Bamigboye (2011) the use of the traditional library is increasingly becoming a thing of the past as most graduates are making use of cheaper and more up-to-date information materials available on the Internet. A survey research conducted by Bamigboye involved 300 respondents who were randomly selected from the University of Ibadan and the University of Lagos. A questionnaire was used to collect data from the respondents. These comprise academic staff, non-teaching staff, and graduate students. A total of 280 respondents duly completed the questionnaire representing, 93.3 % return rate.

The findings of the study indicate that a majority of respondents found that the Internet is available at different parts of the university campus. The academic, non-teaching staff, and graduate students use the Internet for teaching, learning, study, research, and decision-making. Lecturers encourage students to search for materials and resources on the Internet. The university aims to provide adequate and uninterrupted access to the Internet on the two campuses. There are also privately-owned cybercafés around the campuses. The study further found that the libraries studied are living up to the

expectations of their users, especially in the provision of Internet access and other e-resources, but this does not mean that they do not have shortcomings. The Macarthur Foundation, USA, donated a virtual library to the University of Ibadan, and Mobile Telecommunication Nigeria (MTN) donated a virtual library to the University of Lagos, which has enabled these university libraries render effective service to users.

The study recommended that the universities should have a constant power supply, so that Internet services in the universities can be stable and reliable. Again, Bamigboye submits that universities should partner with Non-governmental Organization (NGOs) through public private partnership (PPP) to provide virtual libraries for them. Furthermore, librarians should train users in accessing Internet and e-resources provided by the library. Government should increase funding coming to the universities so that users can enjoy full Internet service.

Ugah (2008) studied the availability and accessibility of information sources and the use of Library services at the Michael Okpara University of Agriculture, Nigeria. Ugah administered 200 questionnaires to graduate students of the University. 168 respondents returned the questionnaire giving a return rate of 84%.

The findings of the study confirmed that information sources were not readily available and that there is a relationship between the availability of information sources and the use of library services. The use of library services has an approximately 80 percent dependence on each variable. The findings further indicated that information sources such as the Internet are not easily accessible and there exists significant difference between Internet accessibility

and use of library. The use of library has 79.8% dependence on the Internet accessibility and an 81.0 % dependence on the availability of resources. Most of the graduate students agreed that information sources such as the Internet were not easily accessible, leading to a lack of satisfaction with library services at the university.

Similarly, Oyewusi (2009) undertook a study of Accessibility and Use of Library Resources by Postgraduate Students in the Nigeria State University of Technology. A total of 600 respondents were chosen to represent the minimum number of students that visits the library on monthly bases. Questionnaire was randomly administered to library users by using an identification number for each library user during the survey period.

The findings of the study concluded that apart from CD ROMs other electronic sources such as electronic books, electronic journals and Internet were not available to respondents. The findings of Oyewusi (2009) affirms Ugah (2008) position that information sources were not readily available and that there is a relationship between the availability of information sources and the use of library services at the Michael Okpara University of Agriculture, Nigeria.

Ifeoma (2012) investigates the impact of Internet on final year graduate students in the Covenant University, Ota, Nigeria. The purpose of the study was to determine the extent of accessibility and utilization of the Internet by final year graduate students of Covenant University. The study also aimed at identifying the most frequently-used search engine by the students and finally to ascertain the impact of the study and use of theInternet on the research work of final year students of Covenant University

The study found that though students have access to the Internet at different locations on the University's campus, majority 79 (52.7%) preferred using the cybercafé in the media center of the university library. 38 respondents, represented (25.3%) preferred using the cybercafés outside the campus. While a total number of 21 students (14%) said their satisfaction comes from the campus wireless hot spots, the least number of respondents, 12(8%) simply found it comfortable using the campus cyber cafes. The respondents (89%) agreed there is 24 hour Internet connectivity at the university.

Again the respondents were required to state the search engines they use. The result shows that most of the students 60 (40%) used Google. The next search engine highly used by students was yahoo 42 (28%) and MSN 21 (14%).

The study concluded that the bedrock for national development is education and the importance of the Internet in contemporary university education cannot be overemphasized. According to Ifeoma (2012), the study and usage of theInternet does not only have impact on the research work of the final year students of Covenant University, it does same for other researchers in many other universities and other spheres of life.

Ifeoma (2012) further stressed that there is urgent need for development of Internet skills in students and all Internet users at all levels. It behooves any user of computer and allied facilities to acquire skills necessary to operate the computer so as to be able to navigate round to explore the avalanche of literature accessible through the Internet. The study emphasized the need for continuous training on ICT/ Internet use and also training on the

ability to formulate search terms for different research topics so as to control the quality and quantities of literature scattered on the Internet.

Alemna and Adanu (2005) studied Internet use at the Balm Library of the University of Ghana and reports that among the services, e-mail is the highest used, followed by the use of Internet for research. The least use of the Internet was for browsing

Apart from the fact that there is the problem of slowness of the Internet system , the study also identified frequent power cuts as the major problem of Internet use at the University of Ghana and recommends a stand-by generator as a long term solution to the problem. Furthermore Alemna and Adanu (2005) opined that the Internet is a viable tool that can provide strong support for academic work hence universities must take it seriously.

Internet Access and Utilization by Graduate Students in Higher Educational Institutions

Chhari and Chakole (2015) conducted a study on Internet access and utilization among medical undergraduate and post graduate students of the Medical College in MedhyaPredesh in India. The aim of the study was to evaluate the pattern of Internet access and utilization by the medical students. The cross sectional study on a total of 507 undergraduate and 127 post graduate students recorded a return rate of 76% among the undergraduate students and 93% among the postgraduate students who completed the questionnaires.

Chhari and Chakole (2015) found out that majority of the respondents (87.0%) reported having knowledge and skills in Internet usage. When asked about ownership of a computer, about 365(72%) of the respondents affirmed

they own personal computers. A close look at the result indicates significantly that the Postgraduates (89%) as compared to the Undergraduate (67%) own personal computers. When asked about their main purpose of using Internet, the undergraduate (74%) cited email/chatting as the main purpose for which they use the Internet whereas the Postgraduates (60%) cited dissertation work as the main purpose for which they use the Internet. The students (89%) identified slow speed of the Internet as the main problem they face while using the Internet.

The study concluded that majority of the medical students in this study had adequate access to Internet and were using it for both academic and personal purposes. The study further concluded that graduate students should be given adequate training to enable them acquire the necessary skills to extract valuable information from the special medical web sites and the Internet as a whole. They should be encouraged to check the authenticity of information by correlating with existing evidences.

Similarly, Bola, Olaniyi and Oyekorke (2012) looked at the Accessibility and Utilization of Internet by Graduate Students of the University of Lagos Nigeria. The descriptive survey as adapted by the researchers specifically made effort to determine the extent to which Internet service was accessible to staff and students of the university, how point of Internet access influenced its usage, factors motivating the utilization of Internet and what Internet was used for by the graduate students of University of Lagos. Bola etal administered questionnaires to 200 respondents randomly selected from the faculty of Education in the University.

The findings of the study show that the graduate students did not have as much access to Internet service as the staff. (27.7% and 62.4% respectively). The result of the study further revealed that 47.9% of respondents strongly agreed they visit the cybercafé to access Internet. Again, 53.1% and 50.2% of the respondents strongly agreed that proximity to cybercafé and valid information contained from the Internet were their major motivating factors for surfing the Internet. On utilization of the Internet, the study found that 71.0%, 31.8%, 39.3%, 47.4%, 18.5% and 39.3% strongly agreed respectively that they used the Internet for course registration, examination enrolment, gathering of information for literature review, awareness and update of knowledge, sending and receiving of mails, accessing the social media and among others. As a result the researchers therefore recommended that since the Internet is being utilized in every sector in human life such as Education, Banking, Medicine and others, Universities should provide adequate support to make the Internet more accessible for students' use.

Agaba (2014)made an assessment of the utilization of Makerere University electronic information resources by academic staff and graduate students of the university. The study requested respondents to give reasons why they use the Internet and related to this were the benefits accruing from use of the Internet.

Findings of the study revealed that 72 (91.1%) of the respondents stated that the Internet enhances their studies and they usually use it for research. This involved retrieval of current literature reviews, personal research, and accessibility to latest research developments in the academic

world. 43 (54.4%) were using the Internet for teaching purposes, while 33 (41.8%) used it for the preparation of presentations and conference papers. Others mentioned book selection, easy communication through the Internet, and acquisition of information on courses and programmes, as some of the benefits they derive from using the Internet.

Elsewhere in Pakistan, Bhatti and Mohammed (2014) examined the experience of Internet utilization by Post Graduate students at the Nishter Medical College. The study specifically looked at Internet usage, purposes for using the Internet, difficulties while using Internet by the Post Graduate Students at Nishtar Medical College (NMC). It also identifies the usage of different health related websites and databases to supplement learning by Postgraduate Students.

The study was based on comprehensive literature review and pre-tested questionnaire that was distributed among 210 Postgraduate Students. The response rate was very satisfactory (85%). The results indicate that 33(18.5%) were female and 145(81.5%) male in total made up of 178 respondents involved in the study. All of the respondents used Internet except only one respondent. The result further indicate that majority of the respondents always use Internet for education purposes. They frequently used it for research, for up to date information, to obtain information about their health and for entertainment purposes. They were using Pubmed database sometimes and MedScape, and PakMediNet occasionally.

The respondents stated that they always use Internet for education purpose (Mean= 4.52). They mentioned that they frequently use it for research, for up to date information, to obtain information about their health

and entertainment purposes. They further stated that they sometimes use it to surf the Internet to seek general information, including sports information and news and they were satisfied with the Internet service on their campus.

Furthermore, a list of search engines consist of eight items was given in the questionnaire and the Graduate Students were asked to rate the usage of these search engines in seeking their required information. The results show that the Google search engine ranked at first (mean=2.61) and used daily for seeking information. The search engine Yahoo ranked on second (mean=1.93) and used weekly for seeking information. The lowest ranked search engine use was Lalacos.com (mean=1.00).

Again, the study revealed the problems being faced by Postgraduate Students include difficulties in finding authentic information on the Internet, slow speed of the Internet and subscription of latest journal is expensive on the Internet. The respondents also cited unavailability of Internet in their departments and load shedding as major problems they encounter. They also face problem due to lack of searching skills, lack of time, and also the required information is not accessible to some extent.

The study concludes for the need of awareness, orientation and trainings for the Postgraduate Students to utilize different databases for seeking scholarly information.

Larbi (2008) investigated Staff Utilization of Information and Communication Technology Facilities in the University of Cape Coast. His findings among others were that; although there was high availability of Information and Communication Technology facilities at the University of Cape Coast, few computers are connected to the Internet hence low

availability of the Internet. People who needed the services of the Internet had to access them from other sources such as the commercial cybercafé around the university. The study further revealed that e-mail was most popularly used software application. The e-mail was used to communicate with colleagues on campus and others.

Larbi concluded that, the problem of slow Internet speed and interruption in power supply as identified with the Internet usage at the University of Cape Coast is similar to the problems encountered by the Postgraduate Students in India (Charri&Chakole, 2015) and in Pakistan (Bhatti& Mohammed, 2014) where the respondents identified load shedding as one of the major problems they face with the utilization of the Internet. Larbi further concluded that usage of the Internet for research was low in respect to collective academic and collaborating research. This assertion is in sharp contrast with that of the Medical students in Pakistan where the usage of the Internet for research was very high. In general, Larbi concluded there was low usage of the Internet at the University of Cape Coast.

Kwafoa, Osman, and Afful-Arthur (2014) stated that the availability of electronic resources does not necessarily illicit utilization. Dadzie (2005) examines access and usage of electronic resources at the Ashesi University College. The study indicated that even though general computer usage for information access was high because of the University's state of the art IT infrastructure that is helping students effectively communicate among themselves and their lecturers, the usage of scholarly databases was quite low. This was attributed to the lack of awareness about the existence of these library resources.

Also, studies by Ajuwon (2003) assessing the uptake of ICTs by health science students at the Ibadan University College Hospital, revealed that the use of the database was poor. This was due to the lack of awareness, lack of access to computers, insufficient training and the high cost of Internet provision. Finance has been a major constraint to Internet expansion and provision for most universities in Ghana. According to Ikem and Ajala (2004) the problem of funding is the major constraint of ICT application in libraries. They were of the view that the problem of funding is more than just acquisition of the hard and software but updating and maintenance are very crucial in order to sustain it.

Mizrachi and Shoham (2004) investigated Israeli B.Ed students' computer attitudes. The predominant computer use was word processing, followed by games, spreadsheet, Internet and programming. No substantial differences were found in gender, age and year of study groups in relation to computer attitudes. On the other hand, more computer use results into much positive computer attitudes. Ghabili and Alizadeh (2008) studied 548 students of health schools in Iran. Majority of the respondents were familiar with ICT for health education, 72.3% of the respondents had a personal computer, 91.6% used the Internet, and 78.8% had an e-mail address.

On the other hand, Uribe and Marino (2006) surveyed 162 students at the School of Dentistry, University of Valparaiso, Chile to survey the respondents use of ICT. The study found out that all the respondents had access to a computer. The study again found out that 96.4% of the respondents used the Internet. Majority of the students (73.4%) had home Internet connectivity. The most frequently used Internet sites visited by the

respondents on approximately weekly basis were: email (92.2%); and search engines (88.3%). However, few respondents (21.1%) used the Internet to search for dental information for their studies.

To add to the above, Smith and Oosthuizen (2006) investigated first year students' attitude towards computers at two South African universities. The findings of the study showed that there was a greater awareness of the benefit of computers, less anxiety of the power of the computer and a more realistic opinion of computer. The study concluded that a less time should be spent in the curricula on persuading students to appreciate the benefits of the computer and more importantly, the Internet as well as dispelling fears about the computer power.

Gay (2006), studied management students at the University of the West Indies, Barbados. Predominantly, the respondents expressed positive attitudes toward the use of the computer and more importantly the Internet within their academic environment. Students (92%) were more motivated in using computers for typing assignments, 95% of them said they use the Internet to enhance their studies, emailing questions to teachers (90%) and distance education from home 68%. There was no significant difference in gender and age on the respondents' attitudes towards the use of the Internet.

Moreover, Inoue (2007) surveyed 174 male and female education students of the School of Education at the University of Guam. The study revealed that students' attitudes to information technology were significantly positive. The study found no differences in students' perceptions of computer technology experiences between females and males as well as amongst numerous academic status groups. This confirms the findings of Gay's study

which indicated that the respondents predominantly expressed positive attitudes towards the use of the Internet. It is also noticeable that both studies found no differences in gender attitudes to the Internet. I am also interested in finding out gender differences in the use of the Internet among graduates in the University of Cape Coast. The findings of my study may also confirm or contradict Gay and Inoue.

Divaris, Polychronopoulou and Mattheos'(2007) investigate Greek post graduate students' attitude towards Internet, the findings indicated respondents positive attitudes towards the need and worth of the Internet for the practicing dentist as well as the important of ICT for educational supplement in the dental curriculum. From the study, 2/3 of the Greek post-graduate dental students strongly agreed on the statements for Internet attitudes, while no negative response was given.

Teo and Lee (2008) found a very significant level of positive Internet attitudes in higher education students in Singapore. The study further revealed that there was no significant variance in computer attitudes by gender though male students showed more positive attitudes towards the computer than the female student counterparts. There was also significant differences in computer attitudes between respondents who personally own computers at home and respondents who do not. Students who own home computers also reported a very low level of computer anxiety compared to respondents who do not.

Conole (2008) surveyed ICT usage among British students. The study reveals that British students are learning in a complex and fast changing environment, adopting a plethora of technological facilities to back their

learning. Personal Computer ownership is high among the British students and the students have become adapted to being able to by electronic means retrieve information. The data establishes that students were using technologies to backing all facets of their learning processes; communication with tutors and other students; keeping abreast of information about their university; finding and managing educational resources; processing data, and doing assignments and presentations.

Ghabili and Alizadeh (2008) studied 800 students of Tabriz University of Medical Sciences in Iran. The study found that about 45% of the graduate medical students used computers for less than an hour per week. The most predominant usage of computers involved Internet connectivity (80%). Nevertheless, of the 320 respondents who used the Internet, a third did so for entertaining purposes. The study further revealed that almost 35% indicated that they usually connected to the Internet in order to respond to e-mails and 5% said they read electronic newspapers. Again, the Internet as a 32% of the respondents identified major resource for searching for medical articles. Nearly 40% said they visited medical sites while they were browsing the Internet.

Popovich, Gullekson, Morris and Morse (2008) compared attitudes towards Internet usage by graduates from 1986 to 2005. The study found out that the significance and use of Internet has improved drastically over the past two decades. Males and females no longer record significance differences in their attitudes to Internet and amount of time spent on the Internet.

Gender Differences in the Use of Internet

Brown and Czerniewicz (2004) investigated the gender differences in Internet usage between male and female graduate students in the University of Cape Town. The study found that in general there was no significant difference between male and female, in terms of access to Internet resources both on and off campus. However, when taking into account levels of everyday access to Internet, the study reveals that male graduate students have more autonomy of access to the Internet with 26% of male graduate students having exclusive access to a home computer with Internet compared to 18% female graduate students.

Furthermore, there was no much differences between male and female graduate students in terms of sharing of computers nor having enough time to use computers. In terms of personal assessment, the study found differences in the self-rating of knowledge and skills, with 26% of male graduate students rating their ability in using the Internet as excellent compared to 15% of female graduate students. Also there were differences in relation to levels of experience, with 24% male graduate students reporting that they have more than 10years experience with the use of the Internet compared to 19% female graduate students. Again, the study noted increased levels of technological interest among the male, as 18% more male graduate students than females agreed that they had a high level of technological interest.

To add to the above, whiles both male and female graduate students said they had access to social networks and support, the females more often looked for help from family members whilst the males tended to solve any problem they encounter with the use of the networks themselves. The females

also more frequently agreed that support from their University for using the Internet was inadequate.

Brown and Czerniewicz (2007) saw few changes in their previous survey. More female students indicated they were not the primary or main user of the Internet facilities they used off campus (67% compared to 38% males). Fewer female students rated their ability using Internet generally as excellent (39% compared with 60%) although when asked about their ability using Internet specifically for academic work an equal number of male and female students indicated they were excellent. On the lower end of the range a larger number of female students specified that their skills and knowledge in this area were poor (62% compared to 37%). No differences were eminent in terms of whom male and female students drew on for technical support. Female students once again were in the majority in their view that institutional support for using Internet resources was poor (64% female compared to 35% male). Also, in terms of using Internet for social/ recreational activities, female students reported spending less time on personal activities (63% compared to only 36% of male students). Certainly in terms of access to technological resources, Internet appears to have equalized between genders.

Similarly, Macharia and Nyakwende (2009) in a survey administered 1092 questionnaires to University Students in a selected sample of public and private Universities in Kenya. The study proposed a Technology Acceptance Model (TAM) to investigate gender differences in Internet usage intentions in higher education. Four exogenous constructs namely, perceived relevance of Internet, perceived enjoyment with the use of Internet, computer self-efficacy, computer anxiety, voluntariness, and two belief factors namely perceived ease

of using the Internet, and perceived usefulness were modeled to influence behavioral intention in the TAM. The study reveals a significant difference in gender utilisation of the Internet.

The results of the study reveal that one antecedent construct that is, Relevance to Studies, has indirect influence through Perceived Usefulness, while four antecedent construct namely Computer Self Efficacy, Computer Anxiety, Perceived Enjoyment, Voluntariness have indirect influence through Perceived Ease of Use of the Internet on Internet usage intentions. These findings suggest that enhancing the five antecedents can instantaneously increase students' intentions to use the Internet except for voluntariness and anxiety.

There was a significantly lower mean of perceived ease of Internet for female students compared to males. This according to Macharia and Nyakwende indicates that female students tend to give a lower evaluation than males of the effortlessness of Internet. This finding is very useful for higher education, specifying that a user-friendly system which facilitates Internet usage should be emphasized during orientation and literacy training.

Again, the study reports significantly lower mean of computer anxiety for males compared to females. This according to Macharia and Nyakwende (2009) indicates that male students are less likely to consider the Internet problematic. The test result further indicates a lower computer anxiety score for male students. This according to Macharia and Nyakwende, shows that male students do not find the Internet usage fearful.

A comparison of genders reveal that males tend to expose more "masculine" traits such as being assertive, impatient, and goal-oriented

indicating that they desire to successfully accomplish efficient Internet usage without distraction. Nevertheless, due to the overwhelming explosion of information on the Internet, it takes a longer time for students to search and select useful information for their studies, causing lower mean scores of computer anxiety for male students (Macharia&Nyakwende, 2009).

This remarkable finding is important for higher education. The evidence suggests that female students are more anxious when using the Internet for their studies. This could be attributed to the uncertainty attributed with the time it takes, and the difficult task to determining the relevance of the information obtained. The study proposes the need for an efficient Internet system that may require search mechanisms designed to help students compare content from different Internet sources, thus producing an extensive list of comparative content to enable students to identify relevant information.

Machariaet al further concludes that features that enhance Internet usage speed are also important for female students. Macharia etal cited for example offering an expert endorsement of the most popular study relevant content on the first page of a website to be accessed by a single click would facilitate female students to make decisions efficiently to access the resource. This, according to the study is because female students tend to be more anxious hence desire to visit sites with readily available and valuable information that can offer quick assistance. Finally, offering female students the right Internet content whenever they need it and placing it a click away can strengthen the usage intentions of female students.

The Usage of Computers and Internetamong University Students

Khalid (2009) explained that after the year 2000, there was widespread use of computers among university students throughout the world. The price of computers has reduced gradually and the Internet connectivity took the computer technology not only to the university campuses but also to the households of students. The widespread use of the computer in universities has propelled even middle class university students in developing countries to now own computers. The use of computers by students has extended to Internet, e-mail, chat, programming, graphics, spreadsheet, online shopping, online literature searching, and other learning resources.

Khalid further explains that students' gender, age and year of study have no substantial effect on their computer usage and attitudes. One worth mentioning outcome of recent literature is that the university students frequently use Internet for general purposes, such as, communication and entertainment rather than educational purposes. Even students who are on professional programmes do not use Internet widely for retrieving educational resources.

Staeh, Martin and Byrne (2001) investigated graduate students' attitudes to Internet, and the perceptions of an Internet career of graduate students admitted in an introductory computing programme at the La Trobe University in Australia. It became eminent from the study that erstwhile Internet programming experience had significant effect on Internet confidence. Again possession of a household computer also had positive effect on Internet anxiety and Internet confidence of respondents. There was a gender variance in Internet attitudes and perception of an Internet career. The females recorded much lesser than males on all measures.

Again, Lau and Au (2002) requested tertiary students in Hog Kong to state what they used their house hold computers for. The respondents (89%) said they used the computer for doing assignment. The other main purposes for using the computer at home were for e-mails, newsgroup and sending e-cards (83%). While 79.4% said they use computers for the Internet, 77% said they connect to the Internet to communicate with their lecturers. Again, 66.5% for Chat room, downloading software, music, photos (50%). A small number less than 10% used the Internet for shopping and buying.

Mattheos (2002) studied 590 graduate students of 16 European dental schools from nine countries. The findings suggest that 60% of the respondents used computers for their education, while 72% have easy access to the Internet. Students in Northern and Western Europe appear to rely largely on university facilities to access the Internet. The same, however, cannot be said for students in Greece and Spain, who seem to rely on household and personal computers. Less than half the graduate students have been introduced to some form of computer literacy education in their universities, with the great majority (79%) obtaining their competence in ICT through other means.

Naqvi (2002) studied computer use among graduate students of the Aga Khan University in Karachi. The findings show that the respondents were using computers more for word processing, data analysis, presentations and emails. Again, the first year students were conducting electronic literature searches more frequently than the final year students.

Seyal, Rahim and Rahman (2002) surveyed computer attitudes of 268 non-computing students in three Universities in Brunei Darussalam. The findings show that computer experience and educational qualification are

connected with the respondents' computer attitudes. Notwithstanding,, variables such as gender, age, ownership of a personal computer, geographical location of institution, and previous computer training experience appeared to have no significant impact on computer attitudes.

Havelka (2003), likened beliefs and attitudes about information technology between management information systems (MIS) and other business students at Miami University, Ohio. Even though both groups held largely positive beliefs to information technology, the exact beliefs that they held were diverse.

Ogur (2004) investigated students' use of computer and Internet at a Turkish military medical school. The findings show that 91.9% of the students said they use computers including hooking up to the Internet, 70.5% use the computer to listen to music and 69.6% use it to watch videos. They predominantly use the Internet for e-mail communication (81.6%). 89% affirmed that the Internet is available at their medical school.

In a study of 1159 graduate students in a university in Denmark, Dorup (2004) explains that 71.7% of the students had access to a household computer. Almost 90% of respondents regularly used the Internet for e-mail, 80% predominantly used the Internet frequently, and 60% can hook up to the Internet from their homes. 92% of the respondents agreed the Internet is available to them at the University. There was a significant difference between male and female use of computers. Less females than males had access to a computer at home, and males had a more positive attitude to the use of computers in their medical studies.

The findings of Ogur (2004) and that of Dorup concludes that there is high availability and utilization of Internet among the students in Turkey and Denmark respectively. What is however not known about these studies is whether they use the Internet also for academic purposes as a high number 91.9% and 80% of medical students in Turkey and Denmark respectively said they hook up to the Internet.

Challenges Graduate Students Face with Internet Usage in Universities

Kwafoa, Osman, and Afful-Arthur (2014) studied the Use of Electronic Resources among Administrators and Graduates in the University of Cape Coast. The result of the study revealed that 19.31% of the respondents identified lack of proper guidance in using the Internet as major challenge they face in accessing online academic resources. While 35.92% mentioned the slow nature of the Internet at the University of Cape Coast as a major challenge they face in using the Internet, 8.45% of the respondents identified lack of knowledge about tools and techniques used for searching and retrieving e-resources as their major challenge in using the Internet at the University of Cape Coast. Kwafoaet al called for the need to intensify awareness creation and education on the accessibility, availability and usage of online academic databases at the University of Cape Coast.

Similarly Agaba, Kigongo-Bukenya and Nyumba (2005) examined the utilization of electronic information resources by academic staff of Makerere University. The study identified lack of enough Internet skills, poor infrastructure and slow speed, low bandwidth or connectivity as the major challenges that confront users of electronic resources. Agaba etal clearly stated that to elicit high patronage of electronic resources there is also the need not

only to increase awareness but also improve on the existing Internet infrastructure to make the Internet reliable and convenient to its users. Chhari etal concluded that the primary problem faced while surfing the web, both among Undergraduates (66%) and Postgraduate (37%) was observed to be the slow speed of the Internet. Other reasons were high cost and inadequate software content of the computers.

Bhatti and Mohammed (2014) conducted a study titled Experience of Internet Utilization by Post Graduate Students at Nishter Medical College, Multan, Pakistan The study revealed that the difficulties being faced by Postgraduate Students include problems in finding authentic information on the Internet and slow speed of the Internet. The result also indicated that subscription of latest journal on the Internet is expensive. The respondents further mentioned unavailability of Internet in their department and load shedding as major problems. They also face problem due to lack of Internet searching skills, inadequate time and sometimes the required information is not accessible to some extent on the Internet.

Agaba (2014**)** made an assessment of the Utilization of Makerere University electronic information resources. The study identified inadequacy of the existing facilities, slow speed or poor bandwidth, poor sensitization or limited publicity, and limited Information and Communication Technology as factors affecting the Utilization of Makerere University electronic information resources. Other factors the study encapsulated were: location of some faculties. For example, faculties of Veterinary and Human Medicine and others that are far from the University Library; lack of fixed schedules for computer laboratories; centralization of the resources; lack of time; irrelevance

of the databases; limited subscription to databases; poor packaging of information; library's preference for cheaper electronic information resources; limited accessibility to databases through use of passwords; restriction in use of diskettes for information retrieval; and brevity of information. The least mentioned factors were laziness, inability to print from the library, and limited funding by the university to avail every department the needed facilities.

Inadequacy of facilities for use was mentioned as the biggest problem users faced, leading to congestion. Poor computer communication systems and poor bandwidth were mentioned as major challenges leading to poor utilization of the Internet resources at the university.

Agaba encapsulated that a number of factors and problems do inhibit use of electronic information resources. However he argues that a look at other studies indicate that such challenges were bound to exist especially in the developing countries where the acquisition of most of these Internet resources solely depend on donor funding.

Conceptual Framework

This study was conceptualized from the view that the availability and utilization of the Internet by graduate students of the University of Cape Coast largely depends on organizational factors such as the beliefs, feelings and thoughts of Management of the university towards the usage of the Internet. Due to the capital intensive nature that goes with the provision of state of the art Internet infrastructure, its availability on campus is largely dependent on management of the university who take decision and control the finances of the University. Graduate students can only use the facilities the university management is able to provide for the university community.

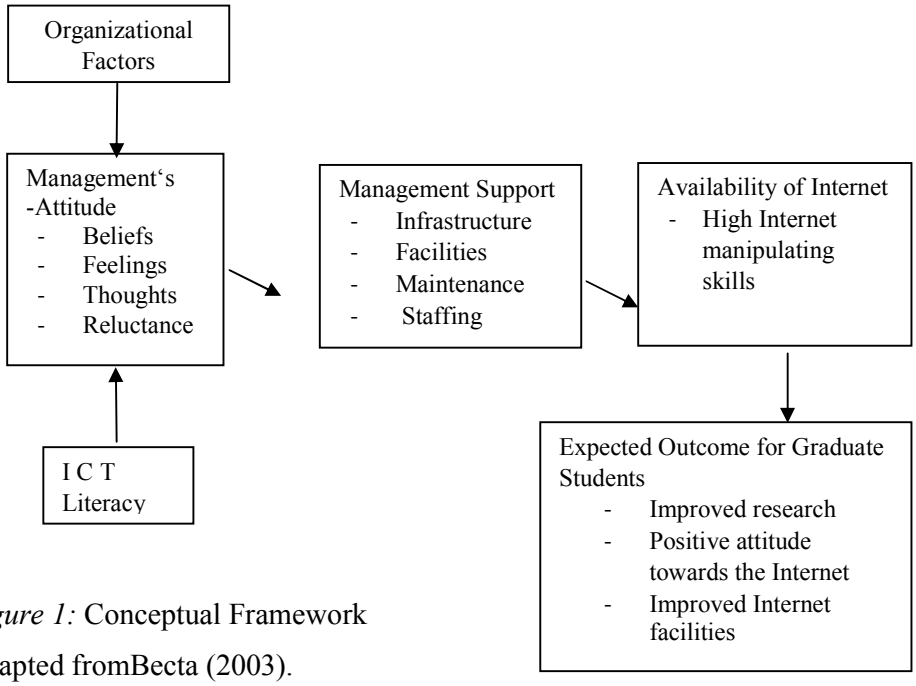

Figure 1: Conceptual Framework Adapted fromBecta (2003).

The conceptual framework was adapted to show how the availability of Internet in a higher educational institution is linked to the belief and attitude of the management or the administrators of the university. In the conceptual framework adapted, the availability of Internet in an educational institution is the dependent variable and the belief, feeling, ICT literacy level and attitude of the administrators of the university towards Internet utilization are the independent variable that influences the availability and utilization of the Internet at the University of Cape Coast. The availability of a technology in an institution is usually influenced by the support it enjoys from the managers of the institution. This is because they provide direction, take decision and control the finances of the institution. This implies that the availability and utilization of Internet at the University of Cape Coast is dependent on

thebelieve, feeling, and attitude of the management of the University of Cape Coast towards the utilization of the Internet.

In spite of the above, Bosu (2000), believed that institutional factors, political power, and economic factors can also affect the availability of a technological facility at a University, in this case the Internet facility at the University of Cape Coast.

Theoretical Framework

The theoretical base for this study is the Technology Acceptance Model (TAM) by Davis, Bagozzi and Warshaw (1989). The Technology Acceptance Model (TAM) was propounded by Davis et al to give explanation of computer technology-utilization behavior. Davis et al based their model on the Theory of Reasoned Action (TRA) by Fishbein and Ajzen. The goal of TAM is to provide an explanation of the determinants of computer technology acceptance that is general, capable of explaining users' behavior across a broad range of end-user computing technologies and user populations.

According to Malhotra and Gallettra (1999) TAM represents an essential theoretical contribution towards understanding of information system utilization and information system acceptance behaviors. They noted that the Theory of Reasoned Action (TRA) from which TAM was conceptualized is a worldwide-studied model from social psychology which deals with the determinants of consciously intended behaviors. According to TRA, a person's performance of a particular behavior is determined by his or her behavioral intention (BI) to perform the behavior, and BI is jointly determined by the person's attitude (A) and subjective norm (SN) concerning the behavior in question. TAM adopts TRA as a theoretical basis for establishing causal

linkages between two key sets of constructs: (1) Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), and (2) User's Attitude (A), Behavioral Intentions (BI) and Actual Computer Usage Behavior.

According to Malhotra and Gallettra PU is defined as the user's "subjective tendency that using a particular technology application system, in this case the Internet, will enhance his or her job performance within an organizational context". PEOU refers to "the degree to which the user expects the targeted technology to be free of effort" in its utilization. Both PU and PEOU predict attitude toward utilization of the technology, defined as the user's desirability of his or her using the system. Attitude and Perceive Usefulness influence the Behavioral Intentions of individuals to use the technology. Actual use of the technology is predicted by the individual's BI. As a result, the attitude of the graduate students of the University of Cape Coast and their perceive usefulness of the Internet will influence their Behavioral Intentions to use the Internet.

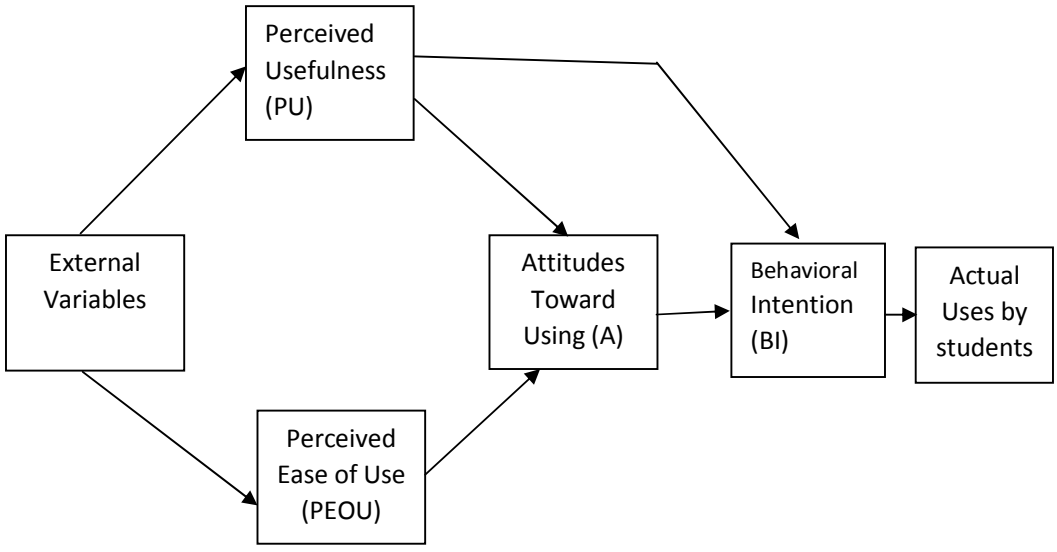

Figure 2: Technology Acceptance Model (TAM)
Adapted from Malhotra and Gallettra (1999).

According to Davis et al cited in Malhotra and Gallettra (1999) the omission of subjective norm from TAM suggests an important area that needs further research. Davis et al observed that the theoretical basis of TRA makes it difficult to distinguish if a technology usage behavior is caused by the influence of referents on one's intent or by user's own attitude and in this case the influence of referents on the graduate students of the University of Cape Coast or their own attitude.

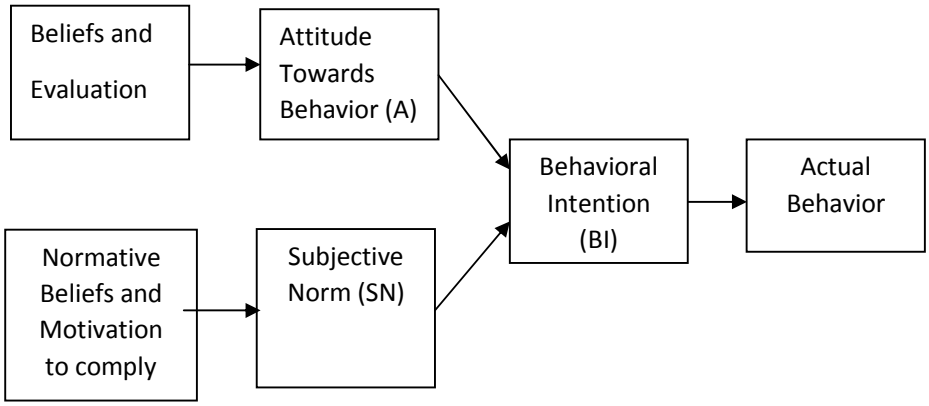

Figure 3: Theory of Reasoned Action
Adapted from Malhotra and Gallettra (1999).

This shortfall identified in the TAM led to the development of Kelman's process of social influence which is an extension of the TAM. According to Malhotra and Gallettra (1999) this extension is called *psychological attachment*, covering the effect of social influence processes on user's behavioral intentions and attitudes toward utilization of a technology. These social influence processes influences the individual resulting in his or her internalization, identification and compliance with the persuaded behavior.

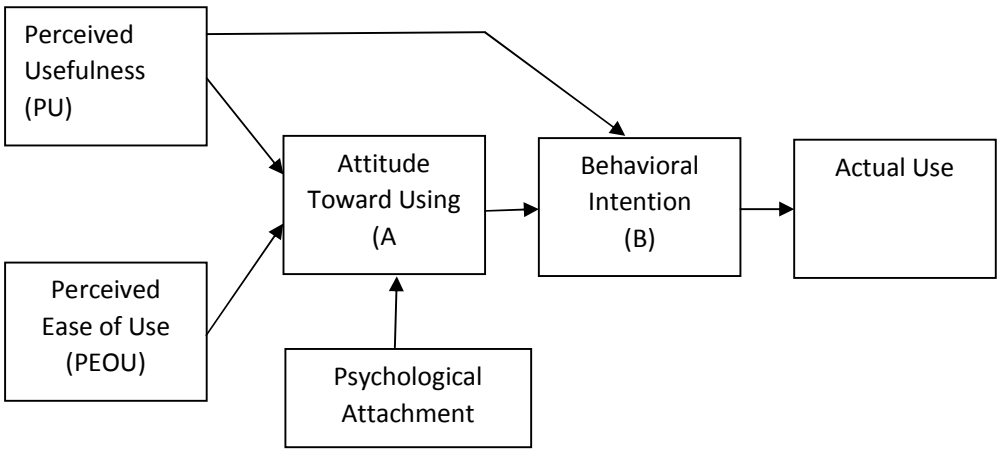

*Figure 4:*The Extended Version of TAM Taking into Account Social Influence

Malhotra and Gallettra (1999) found that at the corporate world an institution's decision about adoption of new information technologies such as the Internet, in the case of the University of Cape Coast, are often made by top executives at the high management level. Such decisions often do not involve the individual end users in the process in this case the graduate students of the University of Cape Coast. Excluded from the decision-making process, users of the technology do not personally invest in the use of the new information systems. Again, the users may also be deficient in an in-depth understanding of the capabilities of the new information systems thus resulting in less than optimal utilization of the functionalities that comes with the systems. In such situations, users often act in compliance with the top managements' instructions, hence user's attitude is not derived from identification or internalization with the use of the new technologies. However Malhotra and Gallettra (1999) suggest that social influences that cause a feeling of compliance seem to negatively influence users' attitude toward utilization of the new information system. In contrast, users' personal investment in the

utilization of the new systems and their better appreciation of the capabilities of the system would yield internalization and identification that have a positive effect on their attitude toward the utilization of the system.

Chapter Summary

This chapter has identified many issues concerning the availability and utilization of Internet by students on university campuses. The review of the literature has examined themes that are significant to the topic. The themes encompassed the availability and utilization of educational technology in higher educational institutions, Internet access and utilization by university graduates, acceptance and utilization of Internet by universities, gender differences in the utilization of Internet and finally challenges graduate students face with the utilization of the Internet.

It was gathered from the review that the Internet is available to graduate students on many university campuses. However, funding was identified from the review as a major problem that inhibits the provision of state of the art Internet infrastructure. The major challenges graduate students face with the utilization of the Internet was the speed of the Internetwhich was very slow and also erratic power supply that made the Internet unreliable. The literature also exhibits no significant gender differences in the utilization of the Internet by graduate students.

CHAPTER THREE

METHODOLOGY

Introduction

This chapter focuses on the methods followed in conducting the study. It discusses the research design, the population, the sample and the method of sample selection. It also describes the research instruments used, the procedure followed in collecting the data and data analysis plan.

Research Design

The research design used for the study was the descriptive survey. According to Babbie (2005), the major purpose of descriptive surveys is to describe situations and events.Turkson (2011) explains that descriptive research tends to look at particular events and conditions and describe them spontaneously. Descriptive survey was suitable for this study because it helped the researcher to describe the availability and utilization of Internet by graduate students of the University of Cape Coast.

Moreover, Turkson (2011) further posits that when embarking upon a descriptive research the researcher can apply both qualitative and quantitative research techniques and methods. As a result both questionnaires and interview guides were used for the data collection of this study. Again, the population for this study was quite large (graduate students at the university of Cape Coast) hence there was the need for a design that can be used for large populations. According to Babbie (2005) surveys are particularly useful in describing the characteristics of a large population hence among all research designs, the descriptive survey design was most appropriate for this study.

Surveys allow the researcher to ask many questions on a given topic giving the researcher a considerable flexibility in analyzing the data. Whereas experimental design may require the researcher to commit him or herself in advance to a particular operational definition of a concept, surveys permit the researcher to develop operational definitions from actual observations (Babbie 2005).This attribute of descriptive survey fits into the study because the study also involved interviews conducted for thefour deputy registrars at the four Colleges including the director of the Computer Centre of the university where the study was conducted hence the researcher had the flexibility to develop operational definitions from the interview. Finally, descriptive survey gives better understanding of the problem under research (Fink, 2001).

Population

The population of the study comprised 1136 graduate students, four deputy college registrars and the head of the computer unit of the University of Cape Coast. In all the total population was 1140. According to the Students' Record Management and Information Section (S.R.M.I.S) of the office of Dean of Students' Affairs of the University of Cape Coast, 1136 graduate students registered for the second semester of the 2014/2015 academic year.

Sample and Sampling Procedure

The proportionate stratified sampling, the simple random sampling and the purposive sampling techniques were used for the study. The sample size for the graduate students in the study was 378. Sarantakos (1998) maintains that a minimum sample size of 291 is recommended for a study

population of 1200. The total graduate students' population for this study was 1136 hence the sample size of 378 was representative base on Sarantakos (1998) table of sample size selection. Furthermore, according to Nsowah-Nuamah (2005) in using the proportionate stratified sampling technique to select from the strata, the researcher on his own can select the sample fraction that will be used based on the number of respondents available in a strata. The sample fraction for this study was 1/3 and was used to select the quota from the various strata of the population. The population was stratified to ensure that the major strata within graduate students of the University of Cape Coast were represented in the study. The main strata were College of Agriculture and Natural Sciences (CANS), College of Education Studies (CES), College of Health and Allied Sciences (CHAS), College of Humanities and Legal Studies (CHLS). The colleges were further stratified to capture maleand female Ph.D. and master students.

The stratified sampling is suitable for this study because the study population contained essential groups as listed above, that needed to be fairly represented in the study. For instance a fair gender representation in the sample was necessary because one of the objectives of this study was to ascertain if there was no significant difference in male and female utilization of Internet at the University of Cape Coasthence both male and females in the population need to be fairly represented. According to Nsowah-Nuamah (2005) stratified sampling is better than purely random sampling because it lessens the probability of one-sidedness. In a simple random sampling, some strata may be excluded, over-represented, others may be under–represented while some may be excluded altogether.

On the other hand proportionate stratified sampling over-rules the possibility of any essential group of the population being completely excluded in the sample. It is possible that the Ph.D. students may be excluded and the master students who dominated the population of graduate students may be used if the appropriate sampling technique was not chosen in selecting the sample for this study. Again graduate students of the University of Cape Coastrepresents various Colleges within the university. The proportionate stratified sampling adapted for the study ensured a fair representation of the various Colleges in the study. Stratified sampling can improve the accuracy of estimates and predictions since it ensures that the various strata that make up the population are all represented in the sample.

Babbie (2005), further explains that purposive sampling technique involves the selection of a sample on the basis of knowledge of a population, its elements and the purpose of the study. In this regard, the four registrars of the four colleges under study including the head of the Computer Centre who were interviewed on the availability of Internet at the University of Cape Coastwere selected using the purposive sampling technique. The Tables 1 and 2 show the population and the stratified sampled population of the study.

Table 1-*Students' Population of the Study*

Colleges	Masters	Ph. D	Total
Agriculture and Natural.	Male= 92	Male= 28	160
Science	Female=31	Female=9	
Education Studies	Male= 242	Male= 48	425
	Female=122	Female=13	
Health and Allied	Male= 6	Male= 0	29
Sciences	Female=23	Female=0	
Humanities and Legal	Male= 275	Male = 78	522
Studies	Female=136	Female =33	
Total	927	209	1136

Table 2-*Stratified Sample Students' Population of the Study*

Colleges	Masters	Ph. D	Total
Agriculture and Natural	Male= 31	Male= 7	52
Science	Female=11	Female= 3	
Education Studies	Male= 81	Male= 16	142
	Female=41	Female=4	
Health and Allied	Male= 2	Male= 0	10
Sciences	Female=8	Female=0	
Humanities and Legal	Male= 92	Male = 26	174
Studies	Female=45	Female =11	
Total	311	67	378

Additional Information on the Study

This section deals with additional information on the study which encompass the various demographic data of the study. Table 3 presents the college distribution of the study. The College of Education Studies has the highest representation of 42%in the university.

Table 3-*College Distribution of Study*

Colleges	Frequency	Percent
Education Studies	133	42.0
Health and Allied Sciences	10	3.1
Humanities and Legal Studies	131	41.3
Agriculture and Natural Sciences	43	13.6
Total	317	100.0

Source: Field survey, Atter (2015)

The sample size for the College of Education Studies was 142 however 133 respondents returned their questionnaires. Similarly, the sample size for the College of Humanities and Legal Studies was 174 but from Table 3, it can be seen that 131 participated in the study.

Out of the 52 targeted respondents from the College of Agriculture and Natural Sciences 43 actually participated in the study. There was however 100% return rate from the College of Health and Allied Sciences. The College of Education Studies and the College of Humanities and Legal Studies have higher representation in the study because the two Colleges have higher graduate students' population. Hence the proportionate stratified sampling technique used for the selection of the sample size gave their representation

according to the population at the College. On the other hand,the College of Health and Allied Sciences has the lowest percentage in the study and this was because the College has low graduate students population. Unlike the other three Colleges involved in the study, the College of Health and Allied Sciences do not run Ph. D programmes. In all, the return rate for the study was 83.9%.

Table 4 presents the gender distribution of the study. From Table 4, the analysis of the demography indicates that the study was male dominated 205 (64.7%).

Table 4-*Gender Distribution of the Study*

	Frequency	Percent
Male	205	64.7
Female	112	35.3
Total	317	100.0

Source: Field survey, Atter (2015)

Table 5 presents the age distribution of the study on the availability and utilization of the Internet at the University of Cape Coast.

Table 5-*Age Distribution of the Study*

	Frequency	Percent
20-30	130	41.0
31-40	141	44.5
41-50	42	13.2
51 and above	4	1.3
Total	317	100.0

Source: Field survey, Atter (2015)

Table 5 shows clearly that 130 (41%) of the respondents fell within the age range of 20-30 years old whilst 141(44.5%) of them were within the ages of 31-40 years old.This clearly indicates that majority of the respondents 141 (44.5%) of the study were within the age range of 31-40 years old.

Table 6 presents the distribution of the respondents involved in the study according to their levels.This was important due to the stratified nature of the graduate students of the University of Cape Coast.

Table 6-*Level Distribution of the Study*

	Frequency	Percent
First Year Master Students	164	51.7
Second Year Master Students	92	29.0
Ph. D Students	61	19.2
Total	317	100.0

Source: Field survey, Atter(2015)

It can be seen clearly from Table6 that out of the total number of 317 graduate students that participated in the study 164 of them (51.7%) were first year master students. The analysis indicates that there has been a fair representation of all the levels of graduate students of the University of Cape Coast with the first year master students constituting the majority (51.7%) of the study.

Research Instrument

Data needed for this study were obtained using questionnaires and interview guide. The use of questionnaire in collecting data in descriptive survey has some strength over other instruments such as observation. The major ones are enumerated as follows;

Firstly, Babbie (2005) explain that the use of the questionnaire offers economy of time and cost.Expenses involved in training observers and the time involve in observations are reduced when one uses the questionnaire). In addition there is uniformity in questions. Thus each respondent receives the same set of questions printed in exactly the same way. Questionnaires are therefore likely to yield more comparable data than observation (Babbie2005).

Finally the use of questionnaires offers a high level of reaching a lot of respondents. The questionnaire can be sent almost everywhere provided an efficient postal service is in place, a condition that is usually impractical for observation. Notwithstanding these advantages, the use of the questionnaire also has the following disadvantages;

Itis mostly limited to literate population. This is because it requires the respondent to read the items and provide appropriate responses in a written form. It comes with many challenges using the questionnaire to collect data in developing countries with high illiteracy rate.

Furthermore, because of the characteristics of non-response associated with the use of questionnaires, each questionnaire not returned is likely to affect the representativeness of the sample resulting in a biased final sample. To reduce this effect the researcher selected a sample size that exceeded the minimum required sample size as Sarantakos (1998) postulates. This was to

cater for any shortfall that may arise as a result of a questionnaire that may not be returned.Lastly, the motivation of the respondent to complete the items is difficult to ascertain since the questionnaire usually is completed in the absence of the researcher.

The items in the questionnaire were derived from the literature reviewed. A set of questionnaire was designed for the graduate students. The questionnaire has two main parts, one and two. Part one contains two sections A and B. Section A of part one contains introductory statements that spells out the purpose for the questionnaire, a guide to answering the items on the questionnaire and also assuring respondents of anonymity and confidentiality. Section B of Part One also contained items that elicited demographic data of the respondents. Similarly, part two of the questionnaire was also sub divided into sections A and B. Section A of part two contained items that sought information regarding research question one on how the university makes the Internet available to graduate students of the University of Cape Coast.

Items on section Bsought information regarding research question two that looks at the purpose for whichgraduate students of the University of Cape Coast use the Internet. Thus, varied questions were asked about the purposes for which graduate students use the Internet, the search engines graduate students usually use and finally difficulties faced by graduate students in accessing the Internet on campus. Most of the items were closed-ended. There was however one opened-ended item at the bottom of the questionnaire that further sought information from the respondents, in their own opinion, the major challenges that confronts graduate students with utilization of the Internet at the University of Cape Coast.The Likert scale was provided to

solicit responses from the respondents based on the degree with which they agree or disagree and also the frequency with which the assertions in the closed-ended items on the questionnaire applied to them.

Interview guides were designed for the head of the Computer Centre and Registrars of the colleges.The interview guide was divided into parts one and two. Part one contained introductory statements and the name of the College / Centre where the interview was conducted. Part two sought varied information ranging from whether the Internet is available at their colleges, the current state of Internet infrastructure at the university, the adequacy of Internet facilities at their colleges/ Centre, the purpose for which they observe graduate students use the Internet and the challenges the colleges/ Computer Centre face in making the Internet available for graduate students of the University of Cape Coast.

Validity of Instruments

The research instruments were subjected to a validity test by an expert to ascertain how they meet face and content validity. The suggestions as given by the expert were incorporated to effect the necessary changes to improve upon the instrument.

A pilot test of the instruments was then conducted. The questionnaires were administered to 30 graduate students in Ghanaian Language, English Language and Music departments in the University of Cape Coast. These students were chosen for the pilot testing because as graduate students in the same university, they were expected to have similar academic needs and characteristics in terms of the utilization of Internet compared to the graduate students that were involved in the actual study.

The data gathered were analyzed and the reliability test was .721 atCronbach's alpha level (See appendix D)**.** The graduate students who participated in the pilot study were excluded from the main study. The pilot test further helped to revise and modify the items on the questionnaire thereby making the items simple and clearer. Thus, items on the questionnaire were more specific and effective in collecting the needed data.

Data Collection Procedure

In order to ensure a high return rate, the instruments were administered personally with the help of a research assistant. The research assistant was given orientation on how the questionnaire should be administered and brief explanation on the items on the questionnaire.

Before data collection, the researcher presented copies of introductory letter from the Director of the Institute for Educational Planning and Administration of the University of Cape Coast, to Registrars of the four Colleges where the study was conducted. The purpose of this introductory letter was to solicit for co-operation and also to create rapport between the researcher and the Director of the Colleges whose Registrars and students respectively, served as sources of primary data and respondents for the study.

A discussion was held with each Deputy Registrar of the Colleges to agree on a convenient time for the interview and observation. It is important to note that the one of the interviewees declined the interview due to busy schedule. All efforts by the researcher to arrange for an Information and Communication Technology (ICT) personnel from the College to respondto the questions on behalf of the Registrar proved futile.

Apart from one Registrar who participated in the interview personally, the rest of the Registrars invited the ICT expert in the College to speak to the issues on their behalf. According to the registrars some issues about Internet are quite technical hence the need for an expert to help respond to the interview so as to have appropriate responses.

Apart from the Registrars, the Director of the Computer Centre which is the Centre responsible for distribution of Internet to the various Colleges of the University of Cape Coast was also interviewed. At the Computer Centre, the researcher chanced on a copy of a letter dated 15th June 2009, written by the then GRASAG leadership requesting for Internet to be extended to the Graduate Hostel.

There were 19 items on the interview guide. Each interview section lasted for about 20 to 25 minutes. Apart from one interviewee who permitted a tape recording of the interview, all the others declined their voices be recorded on tape. The researcher therefore wrote down the responses in a book. The researcher intended to have an observation of the Internet facilities at UCC. This was however, not done because the researcher was not granted access to do the observation.

Turkson (2011) posits that when embarking upon a descriptive research the researcher can apply both qualitative and quantitative research techniques and methods As a result interviews were conducted concurrently with the administration of the questionnaires. Most of the questionnaires were administered to the students at the Graduate Hostel (The VALCO Trust Hostel) the official residence for graduate students of the University of Cape Coast. Others were also administered to students at their Colleges and also at

the University of Cape Coast Graduate Students Association of Ghana (GRASAG) Office, when the students were coming to pick up their GRASAG's dinner tickets. In general, it took the researcher two months, from May to June to collect the data for the study.

Data Processing and Analysis

The data collected were analyzed through the computation of measures of central tendency (means), frequencies, percentages and the Mann Whitney U test with the use of the Statistical Package for Social Sciences (SPSS). The use of frequencies and percentages in addition to the means were intended to give a clearer meaning of the analysis. The data collected were analyzed according to the research questions as follows;

Research Question One:

How is the Internetavailable to graduate students of the University of Cape Coast?

The respondents were asked to tick from amongst various statements of possible ways the university could make the Internet available to graduate students. The statistical tools used to analyze this research question were frequencies, percentages and means. The scale of measurement was the nominal scale.

Research Question Two:

In what ways do graduate students of the University of Cape Coast use the Internet?

Similarly, the nominal scale was used for the measurement for this research question. The respondents were required to tick from among various statements that indicated the ways graduate students make use of the Internet. Again, the measures of central tendency (means), frequencies and percentages were used for the analysis. The use of the frequencies, percentages in addition to the means gave a clearer meaning of the analysis. Using the frequencies and percentages, one can at a glance of the analysis tell the most outstanding ways by which graduate students make use of the Internet.

Research Question Three:

What is the state of Internet infrastructure at the University of Cape Coast?

In order to understand clearly the subject under study, an interview was conducted to ascertain the state of the Internet infrastructure at the University of Cape Coast. The Computer Centre at the University of Cape Coast is the Centre responsible for the distribution of Internet to all colleges of the University of Cape Coast. As a result, the director of the Computer Centre as well as deputy registrars at the four colleges under study, namely the College of Agriculture and Natural Sciences, College of Education Studies, College of Health and Allied Sciences, College of Humanities and Legal Studies were interviewed to ascertain the state of the Internet infrastructure at their colleges and the university at large. The researcher prepared an observation list to observe the Internet facilities and equipment at the university however the researcher was not granted access to do the observation.

Research Question Four:

What are the challenges that confront graduate students of the University of Cape Coast in using the Internet?

The study also took interest in identifying some challenges graduate students face in using the Internet provided by the University of Cape Coast. The respondents were required to indicate on a likert scale as Strongly Agree, Agree, Disagree and Strongly Disagree to nine assertions that relate to challenges in using the Internet. Both descriptive (frequencies and percentages) and inferential (means and standard deviation) statistics were used to analyse the responses.

Hypothesis

H_oThere is no statistical significant difference in male and female usage of the Internet by graduate students of the University of Cape Coast.

H_1There is statistical significant difference in male and female usage of the Internet by graduate students of the University of Cape Coast.

The Mann Whitney U test was employed as the statistical tool to ascertain if there was no significant difference in male and female usage of the Internet by graduate students of the University of Cape Coast.Pallant (2005) posits that the Mann Whitney U test compares median of two independent groups on the same issue in order to determine whether there would be statistical evidence that the median of the associated population are significantly different.Pallant, further explains that the Mann Whitney U testis suitable for non-parametric data and it is a non-parametric alternative to the t-

test for independent samples. The Mann Whitney U test was used in this study because the data involved in the study were non parametric.

Chapter Summary

This chapter has discussed and defended the use of questionnaire as the main instrument most suited for this study. The chapter also reports on the pilot study that was conducted before the actual study. The pilot study allowed the researcher to try the questionnaires, develop questionnaire administrative skills and prepare an analytical, which resulted in changes in the construction of the items. The organization of the methods to be used in the study was enabled through the production of the pilot test.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

The purpose of this study was to ascertain the availability and utilization of Internet by graduate students of the University of Cape Coastto facilitate their academic work. A set of questionnaires and interview guide were employed to gather the requisite data for the study. The data from317 graduatestudents were analyzed through the computation of frequencies, percentages, means and standard deviation distributions. Also the Mann Whitney U test was employed to test the hypothesis. This chapter presents the interpretations, discussions and inferences that were made from the output. The researcher adapted the following decision rules to give interpretation to the analysis of the mean distribution of the study.

Decision Rule

1.0 -1.9 -Strongly Agree / Always

2.0– 2.9-Agree / Frequently

3.0– 3.9-Disagree / Sometimes

4.0- 4.9 - Strongly Disagree / Never

The decision rule gives interpretation of the mean for the various items on the questionnaire. Items that have mean that range between 1.0 – 1.9 are interpreted as strongly agree or always.. Items that have mean that range between 2.0 – 2.9 are interpreted as agree or frequently.. Items that have mean that range between 3.0 – 3.9 are interpreted as dis agree or sometimes.. Items that have mean that range between 4.0 – 4.9 are interpreted as strongly disagree or never

Research Question One:

How is the Internet available to graduate students of the University of Cape Coast?

This research question sought to find outhow the Internet was made available to graduate students of the university.That is, wherestudents had access to the Internet such as: the graduate hostel, halls of residence, at their departments, main library and the ICT Centre., Secondly, the research question sought to find outif the Internet was available to them as a course of study.The statistical tools used to analyze this research question were frequencies, percentages, means and standard deviation. The scale of measurement was the nominal scale. Table 7 shows the analysis of the data.

Table 7-*Availability of Internet at UCC*

ITEMS	SA		A		D		SD		M
	F	%	F	%	F	%	F	%	-
Internet service at UCC	175	55.5	130	41	5	1.6	6	1.9	1.40
There is reliable Internet service at UCC	-	-	14	4.4	197	62.1	106	33.4	3.29
There is adequate Internet facilities at UCC	1	.3	22	6.9	179	56.5	115	36.3	3.29
There is no need to upgrade Internet facilities at UCC	3	.9	5	1.6	104	32.8	205	64.7	3.61
There is Internet service at my Department	101	31.9	135	42.6	39	12.3	42	13.2	1.46
I study Internet at UCC	27	8.5	42	13.2	94	29.7	154	48.6	3.18
Acquired Internet skills during lectures	36	11.4	78	24.6	98	30.9	105	33.1	2.86
I use personal laptop to access Internet	179	56.5	88	27.8	25	7.9	24	7.6	1.38
I rely on UCC computers to access Internet	33	10.4	46	14.5	95	30	143	45.1	3.10
I rely on home base computers for the Internet	34	10.7	57	18	99	31.2	127	40.1	2.94

Table 7,continued

ITEMS	SA		A		D		SD		M
	F	%	F	%	F	%	F	%	-
UCC provides adequate support for Internet	19	6	74	23.3	130	41	94	29.7	2.94
Access to Internet at the graduate hostel	55	17.4	121	38.2	77	24.3	64	20.2	1.93
Access Internet at Cyber Café	45	14.2	109	34.4	90	28.4	73	23	2.60
Access Internet at main library	41	12.9	117	36.9	85	26.8	74	23.3	2.61
Access Internet at ICT centre	63	19.9	136	42.9	60	18.9	58	18.3	1.62
Wireless facilities available on campus	85	26.8	172	54.3	38	12	22	6.9	1.85
Generally, UCC provides accessible Internet	-	-	75	23.7	121	38.2	121	38.2	3.14
Am satisfied with Internet delivery on campus	5	1.6	23	7.3	142	44.8	147	46.4	3.36

Source: Field survey, Atter (2015)

M=Mean, F= Frequency, %=Percentage, SA= Strongly Agree. A=Agree, D= Disagree, and SD=Strongly Disagree

Table 7 shows the descriptive statistics on the availability of Internet at the University of Cape Coast and how it was made available to the graduate students.It can be seen from Table 7 that Internet services are available at UCC as 55.5% and 41% of respondents respectively strongly agreed and agreed to its availability. A mean of 1.40 was recorded (see decision rule, page 83). This indicates that a greater number of the respondents held a stronger view to the assertion that the Internet is available at the University of Cape Coast. This falls in line with the findings of Ifeoma (2012) where the respondents (89%) agreed there is 24 hour Internet connectivity at the Covenant University and they have access to the Internet at different locations on the university's campus. Although the Internet was available to the graduate students for use at the University of Cape Coast, the majority (78.3%) respondents indicated that it was not available to them as a course of study.

It can be seen from Table 7 that the Internet is accessed by the graduate students at different locations of the university' campus such as, the Departments (1.46) mean, Wireless on campus (1.85), ICT Centre (1.62), and the Graduate Hostel (1.93), Main Library (2.61) and at Cyber Café (2.60). This results show that Internet at the University of Cape Coast for graduate students is most available through wireless facilities on campus (81.1%), at the Departments (74.5%), Graduate hostel (55.6).The respondents said it was not available to them as a course of study. Study by Ifeoma (2012) also found that the Internet was made available to graduate students at different locations of the Covenant university (Nigeria) campus. Similarly, Bamigboye (2011) also

found that the Internet is available for graduate students at different locations of the University of Ibadan and the Lagos University's campuses.

All the items in Table 7 recorded a mean of means of 2.5. The mean of means was the average of all the means under this research question. The mean of means (2.5) falls within the decision rule 2.0 -2.9 (see page 83).This shows the respondents' affirmation of the availability of the Internet at the University of Cape Coast.

Although the Internet is available at different locations on the university's campus it was found out that it was not really accessible and reliable. This can be seen from Table 7 where the issues of UCC providing accessible and reliable Internet have means of 3.14 and 3.29 respectively and the students' satisfaction of Internetdelivery having a mean of 3.36. These means recorded fall within the decision range of 3.0 – 3.9 (see decision rule, page 83) which suggest that majority of the respondents did not agree that the Internet at the University of Cape Coast was accessible and reliable. This finding affirms the position of Larbi (2008) that the Internet connectivity at the University of Cape Coast was very slow, unreliable and unstable during most parts of the day and it was due to poor networking, unreliable Internet service providers and occasional interruptions in power supply. It further affirms the position of Bola, Olaniyi and Oyekorke (2012) whose finding revealed that graduate students did not have as much access to Internet service as compared to the staff of the university (27.7% and 62.4% respectively). On the other hand, this finding contradicts the conclusion of Chhari and Chakole (2015) that majority of the graduate medical students in India had adequate access to Internet and were using it for both academic and personal purposes.

The feeling of the graduate students of the University of Cape Coastshows a contrary picture of what pertains among British students as postulates by Conole (2008) who surveyed ICT usage among British students. Unlike the graduate students of the University of Cape Coast, Conole (2008) revealed that British students were more satisfied with the Internet at their university. They were learning in a complex and fast changing environment, adopting a plethora of technological facilities to back their learning. Personal Computer ownership was high among the British students and the students have become adapted to being able to use the Internet to retrieve information. In the same way, Bhatti and Mohammed (2014) examined the experience of InternetUtilisation by graduate students of the Nisher Medical College (Pakistan). Unlike the graduate students of the University of Cape Coast, majority (74%) of the students of the Nisher Medical College were satisfied with the Internet service on their campus.

In conclusion, the Internet at the University of Cape Coast is available at various locations mostly at the students' departments and wireless facilities on campus. It was however not available to the graduate students as a course of study. Although the Internet is available its accessibility and reliability is unsatisfactory.

Research Question 2:

In what ways do graduate students of the University of Cape Coast use the Internet?

This research question looks at the various ways graduate students of the University of Cape Coast use the Internet. The respondents were required to indicate what they use the Internet for on a likert scale as Always,

Frequently, Sometimes and Never (see decision rule, page 83). Both descriptive (frequencies and percentages) and inferential (means and standard deviation) statistics were used to analyse the responses. The item with the strongest mean (1.0 -1.9) and highest percentage was selected as what the respondents always use the Internet for. Generally, the respondents indicated that they frequently use the Internet to retrieve information to write their thesis and assignments. Table 8 shows the analysis of the responses.

Table 8-*Utilization of Internet by Graduate Students of the University of Cape Coast*

Different uses of the Internet	AL		FR		ST		NV		M
	F	%	F	%	F	%	F	%	
Information related to the University	44	13.9	88	27.8	173	54.6	12	3.8	2.48
To register semester courses	106	33.4	113	35.6	85	26.8	13	4.1	2.02
To obtain info about health issues	37	11.7	64	20.2	168	53	48	15.1	2.75
To send and receive e-mails	94	29.7	139	43.8	76	24.0	8	2.5	1.99
To access course materials	93	29.3	127	40.1	78	24.6	19	6.0	2.07
To obtain information to write assignments	139	43.8	111	35	54	17	13	4.1	1.81
To access online courses	55	17.4	71	22.4	112	35.3	79	24.9	2.68
To access social media	101	31.9	101	31.9	92	29	23	7.3	2.12
To communicate with course mates	70	22.1	91	28.7	112	35.3	44	13.9	2.41

Table 8, contained

Different uses of Internet	AL		FR		ST		NV	%	M
	F	%	F	%	F	%	F	%	
To communicate with lecturers	46	14.5	66	20.8	136	42.9	69	21.8	2.72

Source: Field survey, Atter (2015)

AL= Always, FR= Frequently, ST= Sometimes, NV= Never, F= Frequency andM= Mean.

Mean of means = 2.5

Scale= 1.0 – 1.9 = Always 2.0 – 2.9 = Frequently, 3.0 – 3.9 = Sometimes, 4. 0 – 4.9 = Never

From Table 8, it can be seen that most of the graduate students use the Internet. The mean of means for Table 8 was 2.5. Thisfalls within the scale 2.0 – 2. 9. (See decision rule page 83). The students (95%) said they use the Internet to enhance their studies. This falls in line with Agaba (2014) where majority of the graduate students of the Makerere University indicate that the Internet enhances their studies and they use it to retrieve current literature for their research.Similarly, Bhati and Mohammed (2014) found that the graduate students of the Nisher Medical College (Pakistan) use the Internet to enhance their education.

On specific purposes for which the respondents use the Internet, Table 8 indicates that the graduate students mainly use the Internetto obtain information to write their thesis and assignments, send and receive e-mails and to register semester courses.Whereas 139(43.8%) strongly agreed that they use the Internet to obtain information to write thesis and assignments, 111(35%) agreed. 54(17%) said they sometimes use the Internet to retrieve information to write their thesis and assignments. Only 13(4.1%) said they never use the Internet to retrieve information to write thesis and assignments A high mean of 1.81 was recorded. The 1.81 (mean) falls within the decision rule 1.0 – 2.9 (see decision rule, page 83). This obviously indicates that the graduate students frequently use the Internet to obtain information to write their thesis and assignments. This affirms Canole (2008)'s conclusion that students are using technologies to back all facets of their learning processes; communication with tutors and other students; keeping abreast of programme administration; finding and managing educational resources; processing data, and doing assignments and presentations.

Apart from using the Internet to obtain information to write assignment, Table 4 further indicates that. 94 (29.7%) said they Always use the Internet to send and retrieve e-mails, whilst majority 139 (43.8%) said they frequently use the Internet to send and retrieve e-mails 76 (24.0%) said they Sometimes do so. A high mean of 1.99 was recorded. The 1.99 (mean) falls within the scale 1.0 – 2.9. This indicates that the graduate students, apart from their earlier affirmation that they frequently use the Internet to obtain information to write assignments they also frequently use it to send and receive e-mails. This is in line with Ghabili and Alizadeh (2008) where the graduate medical students of Tabriz University of Medical Sciences in Iran confirm that they connect to the Internet to respond to e-mails. The difference here however is that while majority of the graduate students of the University of Cape Coast (78.5%) affirm that they connect to the Internet to send and receive e-mails, the students of the Tabriz University who do soaccording to Ghabili and Alizadeh (2008) were in the minority (35%).

Again, Table 8 indicates that the graduate students proclaim they sometimesuse the Internet to communicate with their lecturers. Only 46(14.5%) respondents said they always use the Internet to communicate with their lecturers. While 66(20.8%) said they frequently do so, majority 136(42.9%) said they sometimes communicate with their lecturers through the Internet.Surprisingly, 69(21.8%) said they never use the Internet to communicate with their lecturers. A mean of 2.72 was recorded. This gives an indication that lectures and students of the University of Cape Coast do not frequently use the Internet to communicate. Possible reasons for this might be due to organizational culture of the universitywhere power distance might

exist between lecturers and their students. Thus, lecturers strictly uphold formal (face-to- face) students-lecturer communication instead of using the social media such as WhatsApp, Facebook, twitter, imo and e-mails. The university might have not been providing state of the art Internet infrastructure to support its usageas affirmed by Dadzie (2005), that state of the art Internet infrastructure helps students communicate among themselves and their lecturers frequently.

In conclusion, Table 8 clearly indicates thatthe graduate students use the Internet in various ways. The most frequent use include; to obtain information to write thesis and assignments, send and receive e-mails, register semester courses and access course materials.. The least usage were to obtain information about their health issues, communicate with their lecturers and to access online courses.

Research Question 3:

What is the state of the Internet infrastructure at the University of Cape Coast?

In order to clearly understand and appreciate the utilization of Internet at the University of Cape Coast, an assessment of the state of the Internet infrastructure at the university was crucial. This was because a good Internet infrastructure is a prerequisite for the availability and accessibility of the Internet. Availability and accessibility influences utilization of a technology and in this case the Internet. AnICT specialistfrom each of the Colleges that was involved in the studywere interviewed on behalf of the deputy registrars of the colleges. The ICT specialists were interviewed because they are daily in charge and attend to Internet related issues at the various colleges in the

university. Similarlythe Director of the Computer Centre of the University of Cape Coast was also interviewed. This was because the Centre is responsible for the distribution of Internet to the various colleges in the university. The thematic analyses technique was used to analyze the interview data. The major themes that came out of the interview data analyses were inadequateInternet equipment, inefficient Internet infrastructure and funding challenges.. For ethical reasons the interviewees from the colleges were represented by A, B, and C alphabets for the purpose of discussion.

The Computer Centre which is the Center responsible for Internet distribution at the University of Cape Coast has Internet equipment such as Rauters which were used to connect networks, switches which were used to distribute Internet, servers and also Cisco equipment. According to the Director of the Centrethe capacity of these facilities at the university were not adequate to cater for the increasing students' population. The Director indicated that

> '*Our bandwidth is not adequate, 155mgInternet bandwidth is not adequate compared to 700mg and 200mg bandwidths for the University of Ghana and the Kwame Nkrumah University of Science*

Similarly, it came out from the data analyzed that the Internet infrastructurewas old and of poor quality.

Interviewee 'B' lamented '*the Internet infrastructure we have now is not an infrastructure it is just an improvised one'*.According to interviewee 'A' *'If experts were to come and*

assess the Internet infrastructure at the University of Cape Coast they will strongly recommend it should be scraped off'.

Again, interviewee 'C' described the Internet infrastructure at the university as poor

'*The poor existing Internet infrastructure is badly affecting Internet usage at the university. Cap 5 cables used here are old cables compared to Cap 6 cables which are modern and more efficient.' Cisco switches are high quality but expensive. The university does not buy the Cisco switches because of thehigh cost involved. The TP link switches mostly used at the University of Cape Coast are of low capacity and not of good quality; quality Internet facilities provide high speed and easy flow but if you have poor and old facilities like that of the University of Cape Coast, Internet speed will always be slow.'*

These revelations is in variance withDadzie (2005) where he examines access and usage of electronic resources at the Ashesi University College and indicated that the university has state of the art Internet infrastructure that is providing high speed Internet and helping students effectively communicate among themselves and their lecturers.

Funding was a major challenge for the provision of state of the art Internet infrastructure at the University of Cape Coast. It was realized from the interview with the Director of the Computer Centre that there was ongoing project that was laying fiber optic cables to connect all parts of the university campus.

'*This project that was commenced by the university in the year 2013 and aimed at enhancing Internet delivery at the University of Cape Coast was at a halt due to lack of funds*. According to interviewee 'A'*The project is capital intensive and needs huge financial injection by the university'*.

According to the Director of the Computer Centre the university has an ICT policy document which includes policy on Internet provision and usage at the university but this policy document has not been implemented since it was put together hence it has been abandoned. '*Funding was a major challenge that led to the ICT policy to be abandoned'*-Director of the Computer Centre of the University of Cape Coast. It has become eminent from the interview data that, the state of the Internetinfrastructure at the University of Cape Coast was not able to cater for the needs of students..

Research Question 4:

What challenges do graduate students face in using the Internet at the University of Cape Coast?

The itemsthat have strong means that fall within the decision rule 1.0 - 1.9and also the highest percentages were selected as the major challenges graduate students face in using the Internet provided by the University of Cape Coast. The major challenges that confronts the graduate students with the use of the Internet were frequent electricity power outages, slow speed of the Internet at UCC and high cost involve in subscribing journals on the Internet. Table 9 shows the analysis of the responses.

Table 9-*Challenges Graduate Students face in using the Internet at the University of Cape Coast*

Items	SA		A		D		SD		M
	F	%	F	%	F	%	F	%	
Difficulties in finding authentic information	52	16.4	124	39.1	105	33.1	36	11.4	2.39
The speed of the Internet at UCC is slow	154	48.6	122	38.5	29	9.1	12	3.8	1.68
The Internet at UCC is inaccessible	30	9.5	73	23.0	127	40.1	87	27.4	2.45
Frequent power outage affect the use of Internet	198	62.5	72	22.7	22	6.9	25	7.9	1.62
I lack Internet searching skills	24	7.6	53	16.7	122	38.5	118	37.2	3.05
I am unable to surf the Internet	10	3.2	49	15.5	138	43.5	120	37.9	3.16
It is challenging to use search engines	26	8.2	83	26.2	136	42.9	72	22.7	2.80

Source: Field survey, Atter (2015)

AL= Always, FR= Frequently, ST= Sometimes, NV= Never, F= Frequency andM= Mean.

Scale= 1.0 -- 1.9 - Strongly Agree 2.0 – 2.9 - Agree 3.0 – 3.9- Disagree4.0-- 4.9 - Strongly Disagree

Table 9 indicates that the graduate students identified frequent electricity power outage as the major challenge they face with the usage of Internet at the University of Cape Coast. Majority of the respondents 198(62.5%) strongly agreed to this assertion. A mean of 1.62 clearly indicate that the respondents predominantly accepted that electricity power outages frequently interrupt their usage of Internet at the University of Cape Coast. This finding falls in line with. Larbi (2008) that the Internet connectivity at the University of Cape Coast was very slow, unreliable and unstable during most part of the day and it was due to interruptions in power supply. This finding is similar to Bhatti (2014) study where the graduate students of the Nishter Medical College, Multan, Pakistan revealed that the major difficulties being faced by graduate students include problems with electricity load shedding. It is instructive to note that at the time data was being collected for this study there was ongoing nationwide electricity power rationing program across the major cities and towns in the country of which Cape Coast was no exception. The prolonged electricity power rationing program which started about three years ago has affected reliable Internet service delivery at the University of Cape Coast.

Apart from the frequent power interruption, slow speed of the Internet at the University of Cape Coastwas another major problem the graduate students face. Table 9 clearly shows that a good number of the respondents 156(48.6%) strongly agreed to this view. A mean of 1.68 was recorded. This shows clearly that slow speed of the Internet at the university is a problem for majority of the graduate students. This falls in line with Agaba, Kigongo-Bukenya and Nyumba (2005), Chhari and Chakole (2015).Agabaet al examined the utilization of electronic information resources of Makerere University. The study identified slow speed and low bandwidth or connectivity as the major challenges that confront users of the Internet at the

Makerere University.Chhariet al concluded that the primary problem faced while surfing the web, both among undergraduates and Postgraduate was observed to be the slow speed of the Internet. The finding also confirms Larbi (2008) conclusion that the speed of the Internetat the University of Cape Coastwas very slow and unreliable. It further affirms Alemna and Adanu (2005) position that apart from the fact that there was frequent power cut, the problem of slowness of the Internet was also a major problem of Internet usage at the University of Ghana.

In conclusion the major challenges that confront the graduate students were frequent electricity power outages that interrupt the use of the Internet, slow speed of the Internet and high cost of subscription of journal on the Internet. On the other hand, issues such as Internet searching skills, ability to send and retrieve e-mails and accessing of required information on the Internet were not challenges to the graduate students.

Hypothesis:

H_o: There is no significant difference between male and female graduate students' usage of Internet at the University of Cape Coast?

H_1: There is significant difference between male and female graduate students' usage of Internet at the University of Cape Coast.

This hypothesis attempts to identify any statistically significant differences between male and female graduate students' usage of the Internet at the University of Cape Coast. Specific purposes on how graduate students use the Internet were stated and the respondents both male and females were required to indicate on a likert scale as Always, Frequently, Sometimes and Never. The Mann-Whitney U Test was the statistical tool used for the analysis. The analysis indicates no significant differences

between male and female graduate students' usage of the Internet. Table 10 presents the result of the analysis.

Table 10-*Mann-Whitney U Test for Male and Female Differences in Internet Utilisation*

	Internet Utilisation
Mann-Whitney U	10719.000
Wilcoxon W	31834.000
Z	-.723
Asymp. Sig. (2-tailed)	.470

Source: Field survey, Atter (2015)

According to Pallant (2005)in interpreting the output from Mann Whitney U test, the two values that are used in the output are the Z value and the significance level (p), which is given as Asymp. Sig.(2- tailed). Pallant further posits that if the sample size is larger than 30, SPSS will give the value for a Z – approximation test. This test was carried out on the sample of 205 males and 110 females in the study. As the sample includes more than 30 subjects, the Z-approximation was computed. From Table 10, the Z value is -723 with a significance level of p= .40. The probability value (p) is not less than or equal to .05, so the result is not significant. There is no statistically significant difference between male and female Internet utilizationat the University of Cape Coast. I therefore fail to reject the null hypothesis.

This analysis suggests that the purpose for which the graduate students use the Internet (access information to write thesis and assignments, send and receive e-mails and getting up to-date information about the university) is not dependent on gender. This result is in variance with Brown and Czerniewicz (2007) study where significant differences were observed between male and female graduate students in the University of Cape Town. In terms of personal assessment, the study found

differences in the self-rating of knowledge and skills, with 26% of male graduate students rating their ability in using the Internet as excellent compared to 15% of female graduate students. Also there were differences in relation to levels of experience, with 24% male graduate students reporting that they have more than 10years experience with the use of the Internet compared to 19% female graduate students. Again, the study noted increased levels of technological interest among the male, as 18% more male graduate students than females agreed that they had a high level of technological interest.

Implications for Practice in Administration inHigher Education

The conception framework for this study was based on the idea that the availability of the Internet in any higher educational institution largely depends on the beliefs, feelings and support the Internet technology receives from the administrators (managers) of the institution. This therefore calls for administrators who are versatile in Internet and ICT in general. Again, the findings of this study also indicate that the Internet is available at the University of Cape Coast and the graduate students always use the it to access information to write their assignment and theses. Also the internet infrastructure at the university of Cape Coast is not of the best quality. The implications of the findings of this study are that:

Administrators (management) of higher educational institutions should from time to time improve on their literacy level in Internet usage and ICT in general. This will help them to appreciate the importance of Internet in higher educational administration. Administrators can achieve this by attending short courses in Internet and ICT in general. This will expose them to many aspects of administrative work that they can apply the Internet to facilitate their work. Hence they will facilitate its availability in their institutions.

Again, administrators of higher educational institutions should commit resources to provide state of the art Internet infrastructure to their institutions since students, especially graduate students use the Internet to access information to write their assignments and theses. This is possible because according to Bosu (2000),at the higher educational institutions it is the administrators (management) of the university who take decision and control the finances of the University.Finally, administrators of higher educational institutions should support and implement policies that are aimed at providing or improving Internet services at their institutions.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents the summary and conclusions drawn on the findings of the analysis and discussions of the respondents' views on the availability and utilisation of Internet by graduate students of the University of Cape Coast. It also covers views on the state of the Internet infrastructure at the University of Cape Coast as well as difficulties graduate students face in using the Internet at the University of Cape Coast.

Overview of the Study

The study was designed to ascertain the availability and utilisation of Internet by graduate students of the University of Cape Coast. The total population for the study was 1136 graduate students of the University of Cape Coast. The sample size for the study was 378 graduate students drawn from four Colleges of the University of Cape Coastnamely, the College of Education Studies, the College of Agriculture and Natural Sciences, the College of Humanity and Legal Studies and the College of Health and Allied Sciences.The stratified sampling technique was used to achieve the sample size. Out of the 378 questionnaires that were administered, 317 respondents returned the questionnaires. The research design that was used was the descriptive survey. The following research questions and hypothesis guided the study:

1. How is the Internetavailable to graduate students of the University of Cape Coast?

2. In what ways do graduate students of the University of Cape Coast use the Internet?
3. What is the state of theInternet infrastructure at the University of Cape Coast?
4. What are the difficulties that confront graduate students of the University of Cape Coast in using the Internet?
5. H_o: There is no statistical significant difference between male and female graduate students' usage of Internet at the University of Cape Coast?

   H_1: There is statistical significant difference between male and female graduate students' usage of Internetat the University of Cape Coast

Several related studies that have been conducted outsidethe University of Cape Coast(Dadzie 2005; Popovich, Gullekson, Morris and Morse; Gay 2006; Canole 2008; Ikem and Ajala 2004; Ajuwon 2004) and studies within the University of Cape Coastwhich include (Larbi 2008; Bosu, 2000;Kwafoa, Osman and Afful-Arthur 2014) related to the subject were reviewed.

Summary of Findings

From the study conducted the following represent the major findings:

Availability of Internet to graduate students of UCC

The Internet is available to graduate studentsat some vantage points on campus. It is available at theirdepartments, at thegraduate hostel, at the ICT Centre and through wireless facilities on campus. Generally, the graduate students said they were not satisfied with the Internet service on campus. This

was because although the Internet was available on campus, the speed was slow and unreliable. Also, the facility can be accessed at only few vantage points on campus.

Utilization of Internet by graduate students of UCC

The graduate students use the Internet in two main ways. They always use the Internet to obtain information to write their thesis and assignment and also send and receive e-mails. On the other hand the least among the purposes for which the graduate students use the Internet were to obtain information about issues on their health. Using the Internet to communicate with lecturers was also one of the least purposes for which graduate students use the Internet. Finally, using the Internet to access online courses was also on the low side among the graduate students.

State of Internet infrastructure at UCC

According to the data from the interview conducted, all buildings and offices at the Science Campus of the university were connected with fiber optic cables however same cannot be said about buildings and offices at the old site campus of the university. According to the Director of the Computer Centre, most buildings at the old site campus were connected to the Internet through wireless. The state of the Internet infrastructure at the University of Cape Coast was not the best. It was characterized by inefficiencies and frequent interruptions and needs massive improvement.

The Director of the Computer Centre revealed during the interview that funding isa major challenge for the provision of state of the artInternet infrastructure at the University of Cape Coast.

Challenges graduate students face with Internet use at the University of Cape Coast.

The respondents identified frequent electricity power outage, very slow speed of the Internet and high cost involve in subscribing latest journals on the Internet as major challenges they face in using the Internet.

Differences in Internet use between male and female graduate students

The study found no statistically significant differences in male and female graduate students' usage of the Internet at the University of Cape Coast. Both male and female graduate students use the Internet to enhance their studies.

Conclusion

The study in its final analyses revealed that the Internet is available at vantage points atthe University of Cape Coast. According to the majority response the facility has helped to facilitate their learning and research based programs on campus. However, respondents' complains border around difficulties in accessing the Internet at the University of Cape Coast. Again, there were issues that concern the Internet infrastructure which has several challenges in terms of efficiency levels of gargets, interruptions and some equipment being outmoded and substandard. These indeed appears that the Internet framework for learning and research work in the university needs much attention since it forms the broad spectrum of contemporary learning experiences including research on campus.

Recommendations

Based on the strengths of the findings of the study, the following recommendations were made.

1. The Management of the university should procure a bigger Internet bandwidth and high capacity Internet server to that can cater for the increasing students' population. This will help to ease traffic on the UCC Internetand improve accessibility to the Internet on campus.
2. More technical experts should be engaged by the university to handle the technical challenges associated with the Internet infrastructure on campus.
3. Lecturers should make conscious efforts to enhance their communication with graduate students via the Internet. This can be achieved by giving assignments and graduate students' research related works via the Internet.
4. The university should liaise with the alumni of the university and private individuals to secure funds to procure state of the art Internet equipment for the Computer Centre of the university.
5. A high capacity stand-by power plant should be acquired to supply power to the university when there is electricity power outage from the national grid.

Suggestions for Further Research

Future studies could look at the accessibility and reliability of the Internet at the University of Cape Coast. Furthermore, this study could be replicated to find out how the Internet is available to distance education students of the University of Cape Coast and how they use it. It could alsobe

replicated in other universities to ascertain how the Internet is available to graduate students and how they use it to enhance their learning and research.

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APPENDICES

APPENDIX A

INTRODUCTORY LETTER

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Cape Coast
Ghana

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29th October, 2014

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LETTER OF INTRODUCTION

The bearer of this letter **Mr. Ebenezer NartehAtter**is an M.Phil student of the Institute for Educational Planning and Administration, (IEP A) of the University of Cape Coast. He requires some information from you/your outfit for the purpose of writing his thesis titled, **"Availabilityand Utilization of Internetby Graduate Students of the University of Cape Coast"** as a requirement for M.Phil Degree.

Kindly give the necessary assistance that **Mr. Atter**requires to enable him collect the information.

While anticipating your co-operation, we thank you for any help that you may be able to give him.

Evelyn Nyan (Mrs.)
ASSISTANT REGISTRAR
For: **DIRECTOR**

FACULTY OF EDUCATION
INSTITUTE FOR EDUCATIONAL PLANNING & ADMINISTRATION
UNIVERSITY OF CAPE COAST

APPENDIX B

UNIVERSITY OF CAPE COAST

INSTITUTE FOR EDUCATIONAL PLANNING AND ADMINISTRATION

QUESTIONNAIRE FOR THE STUDY OF THE AVAILABILITY AND UTILISATION OF INTERNET BY GRADUATE STUDENTS OF THE UNIVERSITY OF CAPE COAST

PART ONE

SECTION A

INTRODUCTION

I am a Master of Philosophy student at the Institute for Educational Planning and Administration, of the University of Cape Coast. I am to undertake the above mentioned study for the award of the Master of Philosophy Degree. The study is for academic purpose only. Kindly provide accurate responses to all the items in this questionnaire. Your confidentiality is assured. Please, do not write your name on the questionnaire.

To be answered by Graduate Students of the University of Cape Coast.

SECTION B

DEMOGRAPHIC DATA

1. .College ……
2. Institute/Department……
3. Programme of Study ……..

Please, respond to each of the items in this section by a tick [ ] appropriate to your case.

4. Gender : (i) Male [ ]
   (ii) Female [ ]
5. Age: (i) 20- 30 [ ]
   (ii) 31- 40 [ ]
   (iii) 41 -50 [ ]
   (iv) 51 and above [ ]
6. Level (i) First Year Master Student [ ]
   (ii) Second Year Master Student [ ]
   (iii) Ph.D. Student [ ]

PART TWO

SECTION A

AVAILABILITY OF INTERNET SERVICE AND INTERNET FACILITIES AT UCC

Kindly tick [√] in the appropriate boxes provided for each of the statements, the extent to which you agree or disagree to the assertions made below.

(Strongly Agree= SA, Agree= A, Disagree= D, Strongly Disagree=SD)

Item	Availability of Internet service and facilities at UCC	SA	A	D	SD
7	There is Internet service. at UCC				
8	The Internet service UCC provides is reliable.				
9	UCC has adequate Internet facilities				
10	There is no need to upgrade the Internet facilities at UCC				
11	There is Internet service at my department.				
12	I study Internet as a course of study at the graduate level at UCC.				
13	I acquired Internet manipulating skills during lectures at the graduate programme at UCC.				
14	I own a personal laptop/ computer that I use to access the Internet.				
15	I rely on university laptop /computers to access the Internet.				
16	I depend on a home based computer to access the Internet.				
17	The university provides adequate support for Internet service delivery on campus.				
18	I am able to access the Internet at the graduate hostels				
19	I access the Internet from commercial cyber café on campus				
20	I am able to access the Internet from the main UCC library				
21	I can access the Internet at the ICT Centre				
22	Wireless facilities are available on campus to access the Internet				
23	Generally, the Internet service UCC provides is very accessible				
24	I am satisfied with the level of Internet service delivery on campus				

SECTION B

UTILISATION OF INTERNET BY GRADUATE STUDENTS AT UCC

Kindly tick [√] in the appropriate boxes provided for each of the statements, the extent to which the assertions made below are applied to you.

Purpose for using the Internet. Please indicate the purpose as apply in your case as follows; Always, Frequently Sometimes,Never,

	Use of Internet	Always	Frequently	Sometimes	Never
25	To get up- to -date information related to the university.				
26	To register semester courses				
27	To obtain information about health issues				
28	To send and receive e-mails				
29	To access course materials.				
30	To obtain information to write thesis and assignments.				
31	To access online courses				
32	To access the social media. (eg. facebook)				
33	To communicate with my course mates and other students				
34	To communicate with my lecturers				

Use of search engines for seeking information. Please rate the search engines you use as follows; Always, Frequently, Sometimes, Never,

	Search Engines	Always	Frequently	sometimes	Never
35	Google.com				
36	Yahoo.com				
37	MSN.com				
38	AltaVista.com				
39	Excite.com				

Difficulties faced by UCC graduate students in accessing and using the Internet on campus. Please indicate the difficulties as apply in your case as follows; Strongly Agree = SA, Agree= A, Disagree = D, Strongly Disagree SD.

	Challenges face	S A	A	D	SD
40	I face difficulties in finding authentic information on the Internet.				
41.	There is slow speed of the Internet at UCC				
42	Subscription of latest journal on the Internet is expensive				
43	Internet is inaccessible at UCC				
44	The electricity power outage badly affects the use of the Internet.				
45	I face problem using the Internet because I lack Internet searching skills.				
46	I am unable to surf the Internet				
47	I am unable to send and receive e-mails				
48	It is challenging to use search engines for the				

	information I need.				
49	Due to academic activities I do not have enough time to access information on the Internet				
50.	Searching information on the Internet is time consuming.				
51	The required information is inaccessible on the Internet				

52. In your opinion what are the major challenges graduate students face with the utilization of the Internet at the University of Cape Coast.?

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APPENDIX C

UNIVERSITY OF CAPE COAST

INSTITUTE FOR EDUCATIONAL PLANNING AND ADMINISTRATION

INTERVIEW GUIDE FOR THE STUDY OF THE AVAILABILITY AND UTILISATION OF INTERNET BY GRADUATE STUDENTS AT THE UNIVERSITY OF CAPE COAST

I am a Master of Philosophy student at the Institute for Educational Planning and Administration, of the University of Cape Coast. I am to undertake the above mentioned study for the award of the Master of Philosophy Degree. The study is for academic purpose only. Kindly provide accurate responses to these questions. Your confidentiality is assured.

PART ONE

College ……

Institute/ Department …….

Name of Centre……

PART TWO

AVAILABILITY OF INTERNET AND INTERNET FACILITIES AT UCC

1. Please, do you provide Internet service here? If no why? ….....
2. What Internet facilities are available in your centre?
   A…….B…….C…….D……
3. What procedure do graduate students go through to use the Internet at your centre?
4. Do you feel these procedures are cumbersome? ……..
5. What are the reasons for your views please? …….....
6. Who makes request for Internet facilities in your centre?
   A. Lecturers …… B. Students……
   C. Administration Staff…….

   Others ……. (Please mention them).

7. Who are those who make these requests more often (Rate them 1-4).
   A. Graduate Students……. B. Lecturers……..

C. Administration Staff……..

8. How does the centre decide on the type of Internet facility to be made available for graduate students? ……
9. What other Internet facilities do you think are needed for your centre?
10. What are your reasons for these request? ……
11. Does one need a password to access the Internet at your center? Yes / No…

a. if yes, what is the rationale for the password on the Internet at your center?

12. How do you believe students get to know about your Centre? …
13. For what purpose are the Internet resources most often used?
14. What in your opinion can be done to ensure efficient Internet service delivery at UCC?
15. Please do you have policy on the use of Internet at this department?
16. What is the history about the introduction of Internet at UCC
17. What major Internet policies / interventions have taken place to enhance Internet usage at UCC?
18. What in your opinion are the challenges the centre encounter in providing Internet service to graduate students? ……

To be conducted at the University of Cape CoastComputer Centre and each of the four colleges under study.

APPENDIX D

QUESTIONNAIRE RELIABILITY TEST

Case Processing Summary

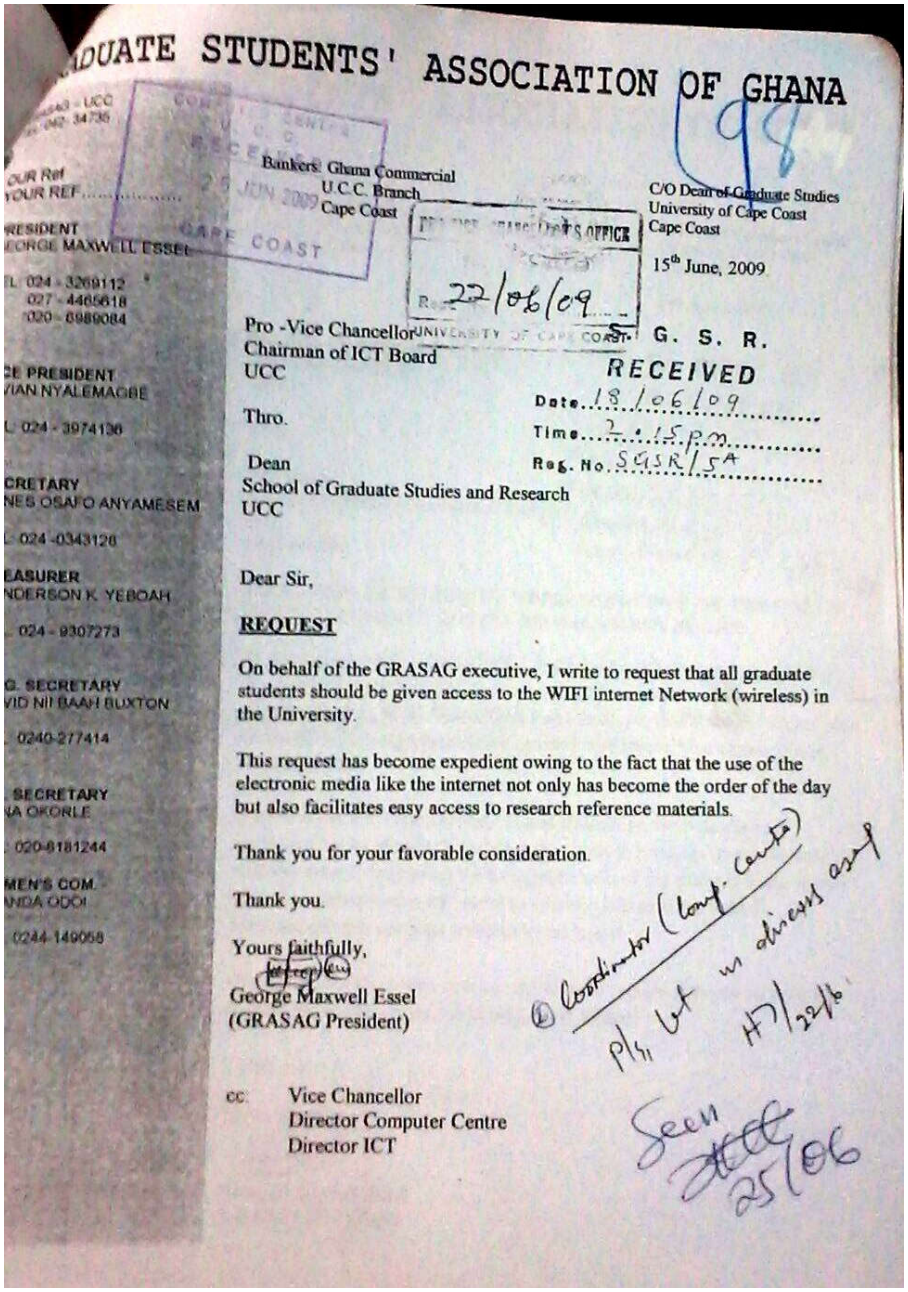
		N	%
Cases	Valid	29	96.7
	Excluded	1	3.3
	Total	30	100.0

Reliability Statistics

Cronbach's Alpha	N of Items
.721	49

APPENDIX E

REQUEST FOR THE EXTENSION OF INTERNET TO THE GRADUATE HOSTEL



DUATE STUDENTS' ASSOCIATION OF GHANA

98

Bankers: Ghana Commercial
U.C.C. Branch
Cape Coast

C/O Dean of Graduate Studies
University of Cape Coast
Cape Coast

15th June, 2009

Pro -Vice Chancellor
Chairman of ICT Board
UCC

S. G. S. R.
RECEIVED
Date 18/06/09
Time 2.15 p.m.
Reg. No. SGSR/5A

Thro.

Dean
School of Graduate Studies and Research
UCC

Dear Sir,

REQUEST

On behalf of the GRASAG executive, I write to request that all graduate students should be given access to the WIFI internet Network (wireless) in the University.

This request has become expedient owing to the fact that the use of the electronic media like the internet not only has become the order of the day but also facilitates easy access to research reference materials.

Thank you for your favorable consideration.

Thank you.

Yours faithfully,

George Maxwell Essel
(GRASAG President)

cc: Vice Chancellor
Director Computer Centre
Director ICT

Seen 25/06