Addis Ababa University

School of Graduate Studies

An Exploratory Study of Internet Use for Education and Research by Postgraduates in AAU

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Acronyms

AAU	Addis Ababa University
ECA	Economic Commission for Africa
E-mail	Electronic Mail
ETC	Ethiopian Telecommunication Corporation
FGD	Focus Group Discussion
HTML	Hyper Text Markup Language
HTTP	Hyper Text Transfer Protocol
ITU	International Telecommunication Union
MDG	Millennium Development goals
MOE	Ministry of Education
NGO	Non Government Organization
UN	United Nations
UNDP	United Nations Development Program
WWW	World Wide Web

Abstract

The application of communication media for education is very vital. The most recent development among these communication media is the Internet. The Internet diffuses very rapidly in all parts of the world, as compared to any other communication media before it. The role of this media for advancement of education in developing countries, where a staggering economy and lack of educational materials is evident, is not a questionable issue. The case of Ethiopia is not an exception to the above fact. Nowadays, a significant increase in the use of Internet is being witnessed in Ethiopia, especially in higher learning institutions and among academicians carrying out different researches.

However, very little research has been done concerning the practical use of Internet by students and its impacts. In light of this fact, this exploratory study examines the use of Internet for academic purposes by students in higher learning institutions. The main objective of the study is to examine the students' pattern of Internet use and to determine the impact of that use on their academic studies. A qualitative data gathering approach consisting of in-depth interview and focus group discussion was employed to meet the stipulated objectives of this research paper.

The findings have shown that there is an increasing dependency on the Internet among the students for the purpose of doing assignments, researches and coursework. The study also revealed that overwhelming majority of the respondents use the internet mostly for e-mailing, and information searching, which were found to have potential impact on their academics. Experience in checking the reliability of sources from the internet has been found rudimentary and most students have a tendency of plagiarism owing to their heavily dependency on the Internet to access information. Limited access to the internet was found a deterring factor for wider use of the internet. Finally, the need for incorporating courses related to media literacy in the curriculum is recommended in order to capitalize the appropriate usage of this technologically new medium - the internet.

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CHAPTER ONE

INTRODUCTION

This is an exploratory study broadly seeking to understand the different patterns of Internet use among post-graduate students at Addis Ababa University, Ethiopia. This chapter presents the background to, rationale for and significance of the study. The objectives, methodology and research questions are also addressed.

1.1. Background

Communication is one of the major facets of civilization that helped shape the world as we know it. It has, throughout the ages, played a leading role in international politics, trade and normal day-to-day life of humankind. Human beings, in their quest to make communication faster, easier and more reliable, have consistently been inventing different communication media from simple stone tablets, print technology and radio, to television and now the Internet.

According to the United Nations Commission on Human Rights, "one of the basic rights of human beings is access to information". The implementation of the above principle is made practical through the use of Internet more than any other technology. This is because the Internet

eliminates the time and distance barrier between the disseminator and recipient of any type of information.

Today, thanks to the advancement of technology, the world has literally shrunk, bringing everyone closer: the phenomenon of globalization. This advancement has brought about considerable changes in almost every sphere of modern life in the 21st century. The Internet has become the dominant communication medium in the world today. Its variable applications have made it indispensable for performing a wide variety of tasks from shopping to carrying out sophisticated medical tasks and the like. The adoption rate of Internet technology exceeds by far that of all technologies developed before it. The Internet has impacted upon every sector, from health and education, to businesses and the personal lives of many humans (ITU, 2005).

In the educational sector, the Internet resulted in transformation particularly of higher learning institutes. Higher education is crucial to long-term economic growth because it provides a vital source of skilled and knowledgeable workers and an important source of inventive outputs. The role of universities as centers of research and the subsequent diffusion of findings has become increasingly important in the 21st century (Rosenberg, 2001).

Undoubtedly, the Internet will continue to play an important role in transforming higher education throughout the world. The UNDP has conducted several research projects into the effective use of the Internet and all have concluded that it is a powerful medium in the context of education. This is evident in the high penetrative influence of the Internet in the field of education. Certainly, the Internet has impacted greatly on the quality and quantity of teaching, learning and research in education (UNDP, 2004).

The educational implications of the Internet may be dependent upon a variation of the uses of the Internet among students. These uses can range from simply communicating electronically with a person found in another location to having access to databases and information located elsewhere in the world (Bernhardt, 1995). According to Bernhardt, the primary implications are communication and the dissemination of knowledge.

From early times, learning in classes was reinforced by reading, written exercises and practical work. In universities, the use of the Internet is being incorporated into a normal way of life, especially among research workers. The Internet encapsulates the biggest resources of readily

available information in the world, which has made it the world's largest library with a wide range of information. The Internet medium has drastically altered the way information and materials are made available to university communities.

> When students conduct literature surveys, not only can they collect the latest versions of papers quickly and easily via the Internet , but they can also readily ask the authors how each paper fits into the overall pictures and what their latest thinking is on the topic. This provides a richness of educational experience which has not previously been available (Hill, 2001: 235).

Recently, e-mail and Internet access has become relatively widespread in its availablity to schools and universities in Ethiopia. There is also a national strategic plan to implement Internet access in primary and secondary schools across the country (Ministry of Education, 2005).

Reports from the Ethiopian Telecommunication Corporation (ETC) show that the number of Internet subscribers increased from 12,155 in 2004 to 17,710 in 2005. By 2005, the total number of Internet users had reached 113, 000 (ETC, 2005). Within the general population of Internet subscribers, university students are said to be the dominant users. However, there has not been any documented study on the use of the Internet among students or its impact on their studies.

1.2 Statement of the Problem

Sub-Saharan Africa faces significant problems in the provision of health services and education (UNECA, 1996). According to the 1996 UNECA report, there is a lack of educational materials, libraries, access to international journals and research facilities across the sub-continent.

Historically, the developing world imported more knowledge products than they exported. The developing world is dependent on the developed world for books, journals and knowledge in most scientific and technical disciplines. This dependency on the developed world also extends to cultural aspects such as music and art. One major factor that heavily contributes to this is the expensive traditional publishing process and distribution of knowledge products common in developing countries. Ethiopia is no different. As elsewhere in Africa, libraries in Ethiopia have relatively few recent books and print journals owing to the very unstable and small budgets allotted to libraries (Ministry of Education, 2005). According to Gibbs (1995) as cited in Adeya and Oyeyinka (2002: 12), the flow of scientific information from developed countries to the developing, dried up between 1984 and 1994, because small and unstable budgets in sub-Saharan African countries were unable to facilitate such a flow.

The Internet medium can offer a better and probably cheaper access to and exchange of information around the globe for developing countries

than the print medium. In the context of universities, it helps cheaply to avail access to databases from all over the world in addition to communicating knowledge to students.

It is the contention of this thesis that the majority of students in higher learning institutions do not have adequate access to the Internet and are not familiar enough with it, in order fully to utilize it as an educational resource. Furthermore, the writer believes that they are not provided with necessary support from within the academic system in order to improve this situation.

Although the benefits of using the Internet as a teaching and learning tool in the university environment has been well recognized, its impact in supporting the instruction and research needs of students in higher learning institutions of Ethiopia has been given little or no attention in most of the related literature. Furthermore, the majority of research tends to focus on developed countries, with little reference to developing nations. To put it in a nutshell, very few focused studies have been done in Ethiopia with particular emphasis on the level of penetration and impact of Internet usage amongst postgraduate students at Ethiopian Universities.

An effort is made here, therefore, to fill in the gap by providing a useful insight into how postgraduate students at Addis Ababa University's Sidist Kilo Campus use the Internet to support their studies as compared with other traditional media (books, journals and so on), and how they perceive its impact on their academic achievements. An attempt is also made to explore factors which deter the proper and extensive use of the Internet within the university community. Therefore, investigating the significant determinants of Internet use and the weight of its impact on their learning is crucial in setting targets aimed at improving the development, diffusion and use of the Internet at all universities in Ethiopia.

1.3. Objectives of the Study

The overall objective of this study is to examine the usage and assimilation of the Internet media for education amongst postgraduates in AAU and their perception of its impact on their education.

Specifically, the study attempts;

1. To assess the knowledge and attitude of AAU post-graduate students in relation to the use of Internet for their studies.
2. To assess the relative influence of the Internet as compared with other traditional media, such as books and magazines.

3. To explore the perceptions of the students on how using the Internet impacts on their education, and what they perceive as the obstacles in using the Internet.

1.4. Research Questions

To examine how postgraduate students of the Addis Ababa University use the Internet medium and their perception of its impact on their education, this research tries to answer the following three questions:

1 How do students perceive the impact of Internet use on their education?
2 How much do students rely on the Internet for academic purposes over books and other traditional media or vice versa?
3 What do students, particularly postgraduates, perceive as the main obstacles for using the Internet?

1.5.Significance of the Study

In Ethiopia, the use of the Internet is currently more focused at Higher Education Institutions, although plans are in the pipeline to incorporate the medium in the elementary education curriculum. However, there hasn't been any study conducted in assessing the use of the Internet from the student users' point of view. In light of the above, a study that

investigates the role of the Internet among university students is sought to serve as a benchmark for further action.

This study, which is aimed at investigating the use of the Internet among AAU postgraduate students, is expected to provide detailed information about their views on the advantages and drawbacks of using the Internet for their studies. The findings of the study are also aimed at disseminating knowledge to the general public. Apart from indicating the knowledge gap between the availability and selection of materials from the Internet, the study aims to improve decision makers' understanding of the need for media and information literacy in the University and to serve as a benchmark for any possible intervention towards better and effective use of the Internet media for education.

1.6. Organization of the Thesis

The Thesis consists of six chapters. Chapter one presents a general background to the study. It highlights the research problem and sets out the objectives of the study. The Chapter also presents the significance and methods of the study and key research issues.

Chapter Two presents a review of literature on the uses of the Internet. It presents theoretical considerations and sets out the methodological

framework underlying the study. The Chapter reviews literature relating to key theoretical paradigms.

Chapter Three looks at the methods, procedures and techniques employed in the study. The Chapter gives a rationale for the adoption of a qualitative research design. It also highlights the sampling procedures employed. This Chapter also outlines the limitations encountered in conducting the study.

In Chapter Four, the findings of the study are discussed in relation to the research issues mentioned in the introductory chapter; it revisits the theoretical perspectives and literature review presented in Chapters Two and Three. This Chapter discloses the findings of focus group discussions and in-depth interviews. The findings are arranged into four themes derived from the objectives of the study identified in the first chapter.

The last chapter of the study provides a summary and conclusion along with recommendations. This chapter suggests possible implications for further research on the students' use of the new communication technology medium. Based on the findings of the study, it also gives recommendations for overcoming the problems disclosed in the preceding Chapter.

1.7. Definition of Terms

Attitude: is generally described as predisposition to respond in a positive or negative manner towards someone or something in one's environment.

Internet: refers to the physical infrastructure of interconnected computers, cables, and other devices that serves as the infrastructure for global communication.

Internet use: making use of the Internet for academic purposes.

Post-graduate Students: refers to those students enrolled in Masters Program.

Web: refers to a system of computers utilizing graphical user interfaces and accessed via the Internet, that provides access to documents, multimedia files, and websites, which are connected by hyperlinks to other documents, multimedia files, and websites.

CHAPTER TWO

A REVIEW OF RELATED LITERATURE

2.1. Introduction

In this chapter, a review of the literature concerning the uses of the Internet is presented. Various studies that have been carried out in the past in relation to students' use of the Internet for academic purposes are discussed. Theoretical arguments and methodologies surrounding the study of the Internet medium as well as the impacts of the Internet on University students' education and research have also been explored.

2.2. Internet Definition and History

The creation and development of the Internet in the last three decades of the Twentieth Century is attributed to a unique blending of military strategy, big science cooperation, technological entrepreneurship and counter cultural innovation (Castell, 2000: 45; Abbate, 1999; Himannen, 1999). From its inhibited start as a technology that was out of the ordinary and a privilege for a few chosen scientists, today it is an everyday phenomenon in the lives of many.

The following are the different definitions of the Internet forwarded by different authors:

According to Mann and Stewart (2004), the Internet is a worldwide computer network that arose from ARPANET1, an American military network: the core of the Internet, and the system that enables it to work is a suite of software ”protocols” or rules that enable all of the computers on the Internet to communicate with one other.

Another author, Moody (1996), defines the Internet as a co-operative network of networks that links together millions of machines from the mightiest mainframe to the humblest home computer. The above two definitions represent two very different ways of describing the Internet. Whereas the first definition is relatively technical in content, Moody's definition shows the Internet's application in the broadest sense possible.

However, the researcher has chosen the following definition by Metzger et al (2002), that refers to the physical infrastructure of interconnected computers, cables, and other devices that serves as the infrastructure for global communication.

Many people tend to think of the Internet as the Web, when the latter really just is a part of the Internet. Although the concept of the Internet was introduced in the 1980s, it was the introduction of the World Wide

[1] (The United States Defense Department's Advanced Research Project Agency)

Web (WWW) in 1992 that completed the Internet as we know it today (Rogers, 1995). And it is this introduction of the WWW that is responsible for its upcoming indispensability in areas like entertainment, education, medicine, industry, commerce and many more areas.

Before giving a working definition of the World Wide Web for the purpose of this research, a look at a few other definitions forwarded by other researches follow.

The web refers to the information that is made accessible by the infrastructure of the Internet. In particular, the web refers to all the resources and users on the Internet that use the Hypertext Transfer Protocol (HTTP)2.

Moody (1996) defines the web a as collection of documents held on computers around the world that are linked together to form what is called hypertext. Moody goes on to describe the Web as a vast information bank where information can be accessed on line and is composed of sites and web pages made up of text graphics and sounds linked by hypertext mark-up language (HTML)3.

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[2] Hypertext is a method of presenting information where selected words in the text can be expanded at anytime to provide other information about the word, which may be in terms of sounds, picture, texts etc.

[3] HTML is a language used to create the hypertext links.

What makes the Internet stand out from the other types of traditional media is its absolute lack of ownership. The relatively easy access to the Internet and the fact that anyone can voice her/his opinion, with no traditional ownership requirement to use the media for whatever purpose, defines the Internet's multi-ownership.

According to Toffler and Negroponte, cited in Williams (2003), the Internet and other technologies are seen as spelling the end of large, monopolistic media corporations by widening choices and empowering individuals. Although ownership plays a big role in controlling and shaping the information flow in traditional media like radio, TV, magazines, books and the like, the Internet is totally immune to such manipulations.

2.3. Common Features of the Internet

While the Internet has numerous features which can be applied in education, for the purpose of this research the most prominent features of www, electronic mail, and chat rooms will be discussed. These features are also chosen because they are the most widely used features in Ethiopia.

2.3.1. Electronic Mail / E-mail

Probably the most dynamic and most widely used feature of the Internet is e-mail. It has been integrated in the day to day lives of many because of its simplicity and speed. According to Moody (1996), e-mail is a type of communication that allows one to send and receive correspondences through a computer, instead of putting a letter in the mail or using a fax machine.

E-mail and chat are similar in that they are both usually used to keep in touch with friends, and make new acquaintances. But both are being increasingly used in academic fields by researchers, students and instructors to forward academic documents and keep in contact. Electronic mail is the most popular Internet tool because of its capacity to transport large amounts of data over long distances in a very short time (Faye, 1997).

2.3.2. World Wide Web (WWW)

The World Wide Web, often referred to simply as "the Web", started to become a popular resource after 1993 when the first widely distributed browser provided a convenient way to access a variety of information on the Internet. The Web uses multimedia, which means that information can be displayed in a wide variety of formats including sound, picture and

graphics. Users can read text, view pictures, watch animation, listen to sounds, and even explore interactive virtual environments on the Web. A user can move seamlessly from a document or Web page stored on the computer to a document or Web page stored on another computer.

Even though the World Wide Web is only one possible service that uses the Internet, surveys have shown that more than 80 percent of Internet traffic is for the Web. The percentage is likely to grow in the future (Mann and Stewart, 2004).

The World Wide Web (WWW) can thus be defined as a computer-based network of information resources that combines text and multimedia. The information on the World Wide Web can be accessed and searched through the Internet, a global computer network.

2.3.3. Chat

As the word chat itself signifies, it is a cyberspace where people can chat and talk to one another. Usually the messages exchanged contain short statements and symbols such as smileys. Although the chat room is mostly used by friends and groups of people for fun, it is also used among colleagues from different places to exchange ideas and discuss academic issues.

2.4. Application of Internet in development

The Internet today is applied in many areas of studies. The Internet can play a significant role in the development effort of countries like Ethiopia. Among the many areas of application the following are chosen based on their key roles in development.

2.4.1. Health

For developing countries one of the main areas that make crucial differences is health. According to a study by Mungai (2002), five very important areas of application were identified in Africa. These were telemedicine, appointment scheduling, data transmission, consultation and the health net. And the ever-evolving nature of the Internet allows the inclusion of many more areas that make medical access easier for developing countries.

2.4.2. Trade and business

The current trend of globalization makes commerce one of the areas where speed, access to information and technology play decisive roles. And the application of Internet technology in commerce is of great importance. Nowadays it is not uncommon to find business executives

working away from their immediate business area; other developments like online shopping and advertising are also undergoing serious changes.

2.4.3. Education

The Internet has come with an evolution that cannot be compared with existing technologies that were before it. The findings of the study done by Siyanbola et al. revealed that the television revolution took 13 years to reach 50 million viewers while the Internet achieved this mark in only 4 years (Siyanbola and Awoleye, 2006). Although the transformation of such technologies in developing countries is low, especially in sub-Saharan African, the Internet makes a significant contribution to different fields, particularly in the education sector. Students are among the most benefited group in educational institutions as stated by studies carried out by different researchers.

The large databases available to students are attractive alternatives for students to find educational information, especially in developing countries like Ethiopia, where there are very few materials and journals that can be accessed in libraries. In addition to increasing information availability, the Internet has also helped to eliminate the distance barrier which can be a constraint in the exchange of information. A very good

example is the role of Internet in making distance learning easier for students to pursue their education without physically being in schools.

These advantages include the fact that electronic information sources are often faster than consulting print indexes, especially when searching retrospectively, and they are more straightforward when wishing to use combinations of keywords. They open up the possibility of searching multiple files at one time, a feat accomplished more easily than when using printed equivalents. Electronic resources can be printed and searches saved to be repeated at a later date; they are updated more often than printed tools. One main advantage, especially for distance learners or those with limited time to access the library, is their availability from outside the library by dial-up access (Ray and Day, 1998).

Another big advantage that sets the Internet apart from other traditional media is its interactive nature. (Erlindson, 1995: 16). The Internet has the advantages of being interactive, multimedia, of providing internal and external networks and offering a selection of functions, the possibility of regular updates, access to archives, rapid access to a large number of newspapers, and being paperless, thus creating no problems of waste disposal.

According to Woodward (1998), the Internet, as a medium, has been labeled as "non-linear". This means that information can be provided and consumed in a non-sequential fashion by readers. He states that with a hard copy newspaper, finite information is prepared that a reader consumes by starting at the top of the page and reading down, but with an electronic newspaper, the reader may switch from the story halfway through to pursue more detailed information on a point that is archived elsewhere.

Although many studies have been carried out concerning the use of the Internet, most of them do not assess their investigation from the students' perspectives. There is a noticeable gap in the literature about students' perceptions towards electronic information. As Brittain noted, most user studies have looked at the situation through the eyes of the information professionals, rather than the users' (Bawden, 1990: 41).

Among the few studies that tried to look at the issue from the students' point of view is a study conducted in America by Pew Internet. The study found out that students believe that the Internet enhances their education. From the study, communication with lecturers, academicians and classmates using e-mail, searching for information and accessing library materials are found to be among the common uses of the Internet for academic purposes. The students perceive the Internet as a functional

tool that has greatly impacted upon the way they interact with each other and with information as they go about their studies. (Pew Internet, 2002).

The research also ascertained that students' primary source of information is the Internet rather than other traditional print media in the library. A survey distributed to 2054 undergraduate and graduate students at 27 institutions of higher education across the United States revealed that 73% of college students used the Internet more than materials found in the library. Only 9% depended on sources other than the Internet for academic information.

A study of college students' Internet use by Jones and Madden showed that the Internet played a significant and largely positive role in students' academic experience. On the other hand, in this study most (83%) faculty instructors surveyed felt that students spent less time in the library now that they have access to the Internet than before. And as one faculty member pointed out, libraries are still the cornerstone of the research process. (Jones and Madden, 2002).

In many cases students, awed by the newness and possibilities of the Internet, attached undue importance to it, in some cases their

expectations from the Internet by far exceeding the reality. In their study concerning the perception of students on the importance of Internet in their academic careers, Ray and Day (1998) stated that "in some cases they seem to think that there is a button they can press and it will write an essay for them...so to the students it is a big disappointment".

This denotes there is lack of awareness on the full potential and function of Internet resources by the student community. Another related problem mentioned in some of the research is the relative lack of skill in using the Internet.

Internet skills are critical to functioning successfully on the usage of the service for the ultimate best of the education sector, which is characterized by extensive use of the Internet and rapid adoption of Internet-based technologies. A study conducted in Nigeria, for instance, mentioned that gaining Internet skills in the Nigerian development sectors can be competitive; moreover, in the educational sector, it is a determinant of their academic success. (Anakwe, Simmers and Anandarajan, 2002).

Along with all its advantages the Internet has its shortcomings and these seem to be working against the users at times.

Rumbough states that despite the enormous positive aspects it has, different types of Internet 'controversies' are increasing. Such

controversies can be explained in terms of pornography, pirating, and copying term papers (Rumbough, 2001).

Another drawback is its immobility; most online users are reading news from the Internet on desktop computers in fixed locations. As Fidler (1997:22) has indicated, "As with traditional print media, digital forms must be comfortable and convenient to read while lying in bed, riding on a subway, dining in a restaurant, or sitting on a park bench". The closest a web site can get to portability is if a user downloads the site and reads it from a laptop computer. The reader can absorb the information offered at his own pace. Moreover, the fact that the reader can touch and feel the printed paper while turning the pages may be of some importance (Ibid).

In addition, the lack of traditional gate keeping that print material has used to filter information, such as editors and peer reviewing, is for the most part missing on the World Wide Web (Ihlström, 1999). This puts the users of the Web in the position of having to be their own gatekeepers of information. Finally, the printed formats are superior in terms of high quality of printing and long tradition of use which is well rooted in the routines of everyday life (Charness et al, 2001).

2.5. Internet History in Ethiopia

The use of the Internet in Ethiopia began in 1993 GC through international organizations. The UNECA headquarters in Addis Ababa, the capital city of Ethiopia, established and forwarded an e-mail service called PADISNet4. This service was connected daily via direct calls to GreenNet's Internet gateway in London. At that time the Internet had a total of 1200 users. International organizations and NGOs, some academicians and very few private companies were the dominant users.

In 1996, a broadly constituted cross-sectoral national Internet working group supported by the Ethiopian Science and Technology Commission (ESTC), called Bringing Internet to Ethiopia (BITE), drew up a detailed national Internet proposal (Assefa, 2005). This, together with the PADIS/HealthNet services, helped build significant demand for full Internet access which was ultimately provided by ETC in January 1997 (ITU, 2002).

The Ethiopian telecommunications company (ETC) was established in 1996 when the original Ethiopian Telecommunications Agency (ETA) was split in an attempt to develop the private sector (Facts about Ethiopia, 2004). ETC now handles the operation, expansion and development of telecommunications throughout Ethiopia, while ETA handles its

[4] Pan African documentation and information service network.

regulation (Ibid). Currently Ethiopian Telecommunication Corporation is the sole provider of Internet services in Ethiopia.

In January 1997, full Internet access was provided by Ethiopian Telecommunication Corporation (ETC). At that time, ETC had 5,000 clients and by 2006, it serviced about 150,000 users (ETA, 2006). Today the number of Internet users has grown to hundreds of thousands.

An even greater increase of Internet subscribers was triggered by the introduction of a broadband Internet service in 2005.The following graphical presentation shows the rate of growth in Internet subscribers since its start in 1997.

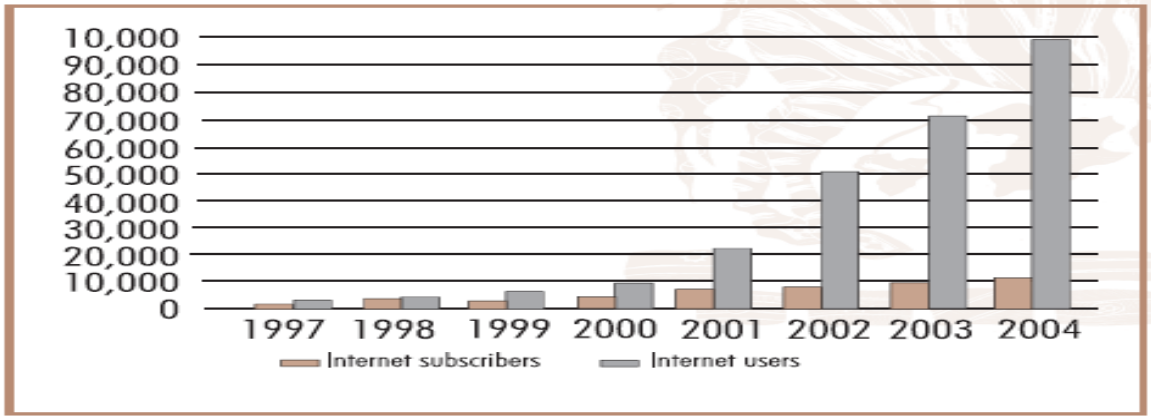

Figure 5.2: Internet Service Growth

Although the distribution of Internet subscribers is growing exponentially in the country, it is highly skewed to the capital. Despite the availability of the nationwide local call tariff for dial-up Internet

users, the distribution of Internet users is still mainly in the capital, with subscribers outside of Addis Ababa accounting for only about 6 per cent of the total user base (Assefa,2005). It is worth noting at this point that the rise in the number of subscribers in major cities like Addis Ababa is mainly due to the increasing popularity of Internet cafés. At the end of 2004 there were about 100,000 Internet users in the capital city, Addis Ababa. (ETC, 2005). From the above statistics it is clear to see that the service is far from covering the rural areas of the country.

2.6. Internet Use in Higher Institutions of Ethiopia

The use of the Internet in Ethiopia is largely focused on the area of higher education. Addis Ababa University, which is the most prominent of all the higher education institutions of the country, is undertaking major steps towards interconnecting all of its campuses. In 1999 research was conducted on the use of ICT in universities and colleges in Ethiopia and revealed AAU as being the highest user. This propelled the efforts of the university towards making information technology available to students.

The first of these efforts was evident when a US-based NGO, HealthNet, established a node at the Medical Faculty of the University of Addis

Ababa in 1994. This node provided e-mail access to medical researchers via the HealthSat/VITA Low Earth Orbit (LEO) satellite (ETA, 2005).

From these modest beginnings, AAU has come to be the largest Internet user in the country, and host to the country's first Internet hub (AAU, 2005). Internet access was first established in 2002 on the main campus . All laboratories, computer rooms, libraries and almost all offices within buildings in the various AAU campuses are connected to the campus backbone (Samuel, 2001).

By 2007 AAU has expanded its Internet services to cover all of its seven campuses which are mostly located within an eight kilometer radius of the main campus. The major campuses of the AAU at which the ICT services are centralized include (AAU, 2005):

Main Campus: The Central Administration, College of Social Science, College of Education, Faculty of Law, Institute of Language Studies, Faculty of Informatics, the Main (Kennedy) Library, the Institute of Developmental Research (IDR), the Institute of Educational Research (IER), Institute of Ethiopian Studies (IES), Office of the Registrar, University Press, Faculty of Journalism and Communication, Ethiopian Media Institute, School of Social Works, and Yared Music School.

Business Campus: Faculty of Business and Economics, 4-Kilo Campus: Faculty of Technology (North), School of Pharmacy, and Continuing and Distance Education Division.

Science Campus: Faculty of Science, the Geophysical Observatory, and the National Herbarium, School of Fine Arts and Design

Tikur Anbessa Campus: Faculty of Medicine, School of Radiography, School of Anesthesia, School of Nursing (Paulos, Zewditu, Tikur Anbessa), Medical Laboratory, and Dental Health Center.

Sengatera Campus: Faculty of Medicine, School of Radiography , School of Anesthesia, School of Nursing (Paulos, Zewditu, Tikur Anbessa), Medical Laboratory, and Dental Health Center .

Lideta Campus: Faculty of Technology South (Building College) and the Institute of Pathobiology.

Debrezeit Campus: Faculty of Veterinary Medicine

The overall ICT infrastructure development was carried out on a phase by phase basis. As part of the first phase project, three campuses (Main Campus, Business Campus, 5-Kilo Campus, and 4-Kilo Campus) have had network infrastructure installed that provides a limited service to the staff and students. The installed network is designed for interconnecting laboratories, computer rooms, libraries and some offices within buildings in the three campuses (AAU, Internet). The link to the

Internet is provided by the ETC through a leased/dedicated line and an access router. The current speed of this link is 1 Mbps (Ibid).

The second phase project deals with infrastructure expansion to cover three more campuses (Faculty of Medicine, Technology South, and Faculty of Veterinary Medicine). The final project deals with infrastructure expansion to cover all the remaining campuses creating the ground for new and state of the art services to the university community. At the end of the third phase infrastructure project, the various campuses of the AAU will be connected through the ETC VPN service (AAU, Internet).

The link to the ISP (Internet service provider) is via cable, and all Internet access in Ethiopia is ultimately via VSAT (V satellite). High capacity copper cables (Enhanced Unshielded Twisted Pair, Cat 5e) are used to connect individual rooms within buildings to nearby switches/Hubs. These, in turn, are connected via fiber optic cables. The infrastructure is expected to be resilient enough, and have sufficient capacity to last for many years. The network also has a Pix firewall for security. A modem pool provides for a dial-up service.

Today an Internet service is being provided to about 3000 of the post graduate students and about 2000 university staff. The most used outlets are the libraries and the computer laboratories. In addition to the free Internet access they get from these centers, students can also get special assistance from attendants especially placed in the libraries. These attendants give advice on how to surf the Internet and how to search for relevant material.

While the Internet service is managed by the ICT department, every department is responsible for its own computers and the provision of access to the students. The University is currently formulating a policy regarding ICT service provision which it hopes eventually to centralize.

However, at the moment Internet access does not extend to all of the undergraduate students. The libraries' Internet service is partially limited to the undergraduates in IT related departments only, as this is due to limited bandwidth on the International link. Moreover, the slow connection and long waiting time tends to discourage students from making the most of the opportunity. Although they could get the Internet service for free at the Library, most students turn to Internet café's because of these problems.

CHAPTER THREE

METHODOLOGY

3.1. Introduction

In an attempt to generate empirical data on the use of Internet for education and research purposes amongst postgraduates in AAU, an exploratory study has been conducted using a qualitative research approach.

A qualitative approach was chosen because:

> It provides an in-depth and interpreted understanding of the social world of research participants by learning about their social and material circumstances, their experiences, perspectives and histories (Ritchie & Lewis 2003:3).

Therefore, this chapter describes the research design and procedure followed in the study and the limitations.

3.2. Research Design and Procedure

Three basic research instruments were used to carry out the work on the chosen institution: observation, in-depth interviews and Focus Group Discussion.

Qualitative research is chosen in this study because it is a type of formative research that offers specialized techniques for obtaining in-depth responses about what people think, do and how they feel and enables researchers to gain insight into attitudes, beliefs, motives and behaviors of the researched. In qualitative research there is strong emphasis on describing the world, as different observers perceive it. Priest (1996: 106-107) says qualitative research gives insight into the individual's beliefs, concerns, motivations, aspirations, life styles, culture, behavior and preferences.

Therefore, this study tries to explore the knowledge and attitudes of the students who use the Internet and in view of that, the researcher focuses on asking 'Why' and 'How' to get the underpinning reasons for using the Internet and the manner in which this is done.

3.3. Research Procedure and Sampling

This research followed a two-stage design which led the researcher to draw a data source for the second stage from the other data sources' participation in the first stage. The two-stage instruments used in the research process and the sampling techniques are discussed as follows.

3.3.1 Focus Group Discussions

Focus Group Discussion allows a small group of people to discuss the key issues of the research topic. The aim of using focus groups was to make

use of group interaction to produce data and insights in ways that the participants would 'naturally' generate meaning in relation to the research questions (Hansen 1998:281). According to Morgan cited in Mann and Fiona (2004: 99), the main characteristic of focus group discussion is interaction among participants. It is this interaction which is thought to illuminate what people feel or think as well as why they may feel or think in that particular way. Krueger states:

> Focus groups provide a special type of information…they tap into the real-life interaction of people and allow the researcher to get in touch with participants' perceptions, attitudes, and opinions in a way that other procedures do not allow (Krueger,1988:177).

As Ritchie and Lewis point out, because of the interactive nature of focus groups, participants have the opportunity to refine their thoughts, and this is particularly useful in attitudinal research. (Ritchie and Lewis, 2003: 58). Kreuger and Casey as cited in Ritchie and Lewis further explain the interaction between participants of a focus group as:

> The focus group presents a more natural environment than that of the individual interview because participants are influencing and influenced by others - just as they are in real life (2003:171).

Sampling is very important in order to define a narrow group to conduct a study. Therefore, a purposive or non-random sampling technique was used in this study. Participants were selected using snowball sampling, as the respondents possessed a particular common characteristic; all were

post-graduate students and frequently[5] used the Internet for academic purposes.

Although Hansen et al argue that one should have a minimum of six focus groups, until comments begin to repeat themselves and little new material is generated (1998: 268), for this research, four focus group discussions (two groups with eight, and two more with six and nine participants) were held. The total number of focus group discussion participants was 31, out of which nine were female. This was mainly due to the resources available to the researcher and time constraints. However, similarity of the responses from the different group participants was obtained. Among the 12 faculties and 38 departments that are found on the main campus of Addis Ababa University, the four focus group discussions involved students from only the Social Science cluster.

In conducting the focus group discussions, the researcher as a moderator worked from a list of predetermined interview guidelines revolving around the research objectives highlighted in Chapter 1 and tried "to encourage an open and creative dialogue with group participants" (Deacon et al 1999: 59). The Amharic language was used in the

[5] Frequent use of Internet is defined by the author to indicate students' use of Internet at least once a day.

discussions to make the participants comfortable and share opinion freely.

To record the data in the focus-group proceedings, a tape recorder was used. The focus group discussions led to the establishment of other research subjects, who were questioned further through individual in-depth interviews, discussed in the following section.

3.3.2 Individual In-depth Interviews

The focus group discussions necessitated the need to use follow-on in-depth interviews due to the need for depth and richness (Ritchie & Lewis 2003:171). Individual in-depth interviews are often used to collect qualitative information. This technique is characterized by extensive probing and open-ended questions and interviews are conducted on a one-to-one basis between a respondent and a skilled interviewer.

Indeed as with most social research, focus group discussions combined with in-depth interviews prove very useful in qualitative research. In this study focus group discussions were used at an initial stage to explore relevant issues. Individual in-depth interviews were important as a follow-up to focus group interviews in order to take forward the issues raised in the focus groups. (Ritchie & Lewis 2003:39)

Individual in-depth interviews are important in any qualitative research because of the opportunity it gives to grasp people's opinion by talking to them. The power of language to illuminate meaning is also imperative. (Ritchie & Lewis 2003:39). Therefore, the in-depth interviews played a vital role in this research to present the descriptions and explanations of the students researched using their own language.

In terms of sampling, individual interviewees were purposively selected from the participants in the four focus-group interviews. In-depth interviews were conducted with nine post-graduate AAU students. Particular attention was given to the most communicative and enthusiastic participants as Ritchie & Lewis suggest respondents in in-depth interviews should be selected based on a pre-determined set of selecting criteria such as "demographic characteristics, circumstances, attitudes and any kind of Phenomena." (2003:97).

The researcher, as in the focus group discussions, used an interview guide, and since the aim was to achieve a breadth and depth of coverage across their use of Internet, some probing questions were also used. A tape recorder was again used to record the in-depth interviews. Data gathered through these empirical methods were interpreted and analyzed further.

3.4. Data Analysis Procedure

All the individual and group interviews (focus group discussions) from the audio tapes were transcribed and translated into English, with an attempt made to maintain the sense of meaning which emerged in the conversations. The data was interpreted and analyzed further. The focus group data was analyzed as a whole group which treats the data obtained from the focus group as a whole without 'delineate individual contributions'. (Ritchie and Lewis, 2003:39). Thematic coding was used as the mode of analysis while for the purpose of confidentiality, the focus group discussants and the in-depth interviewees were given pseudo codes.

Thus, the motivation towards using the Internet for academic purposes, their individualistic understanding of the content as well as the system of the Internet, their attitudes towards the Internet as opposed to more traditional mediums, and how they felt the Internet impacted on their everyday academic practices were taken into consideration. The data was then written in narrative form with pertinent quotations used to illustrate major findings of the study.

3.5. Limitations of the Methods

The major drawback of using qualitative data in this research is generalization. It is also important to highlight that the focus of

qualitative research is primarily on understanding particulars rather than generalizing to universals (Maxwell, 1992: 296). Hence the findings of this research can not be generalized to all the population of the study institutions. However, they generate information which can be helpful in understanding the central issues of this study. In addition, they can also be used to draw a hypothesis which can be tested using further quantitative and qualitative studies.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

4.1. Introduction

One of the key objectives of this study has been to investigate the reasons for students' use of the Internet in their academic environment. Thus, the study tries to explore in detail the students' actual use and perceptions, particularly for academic purposes – in other words, to examine the knowledge, attitude and perceptions of students in relation to the use of Internet for their studies. Another objective of the study was to determine the extent to which students use the Internet or web compared to other traditional media, as well as the obstacles they perceive in using the Internet. This issue is also tied to the attitudes of students towards the Internet media as a credible source of information. The interpretation, analysis and discussion of the relevant data are rooted in the objectives of the study, and informed by the theoretical considerations and literature review in the preceding Chapter.

The chapter presents the findings from the interviews and focus group discussions in a form of narration with direct quotations taken from respondents along with the researcher's observation and other supporting literature as follows.

4.2. Themes for Analysis of Data

Due to the qualitative nature of the methodology employed in the study, the in-depth interviews findings are going to be presented and discussed concurrently. The thematic categorization of data employed for the presentation is focused on four major concerns of the research questions.

The four thematic categorizations that emerged from the research questions to be discussed in this section are:

4.2.1 Where students use the Internet

4.2.2 Extent of Internet use versus other traditional media and student's reliance on the Internet

4.2.3 Impediments encountered on using the Internet

4.2.4 Student perception, including impact on studies

Although these themes are in practice intertwined, they are treated separately for the purpose of clarity of analysis.

4.2.1 Where students use the Internet

The interviews and focus group discussions constituted a total of 31 interviewees, with their ages ranging from 23 to 50 years. In terms of gender, 22 were males and 9 were females.

The first major focus area of the questions posed was on the how and why's of Internet use among post-graduate students of AAU. The sample contained students who have been using the Internet from three to six years, and particularly for educational purposes from one to four years. Most of the respondents use the Internet on a daily basis.

The study found out that most of the respondents usually visit libraries and computer labs at their respective departments to get access to the Internet. In addition, about two-thirds of students uses Cybercafes and other places such as offices due to a lack of Internet access at their homes.

4.2.2. Extent of Internet use versus other traditional media and student's reliance on the Internet

The next area of discussion is the extent to which students rely on the Internet as opposed to other traditional print media such as books and magazines containing academic material. The section also looks at the students' attitude concerning the reliability of the sources of information.

The findings of the study revealed that the majority of the postgraduates in the university use the Internet for academic purposes, and have realized the benefits the Internet has to offer postgraduate students for

serious academic work. As stated by Tigist, a 2nd year postgraduate student,

> "The Internet is the first medium I turn to whenever I have papers, assignments or term papers to prepare. Especially this year for my thesis, I don't consult other printed media unless I couldn't get to an Internet access."

This was commonly perceived among most respondents, and echoed by Jamal's comment, a second year political science and international relations student who considers the Internet as his "right hand" for academic purposes.

The researcher observed that very few students tended to rely primarily on books and print media found in the library to cater for their information needs. Although the AAU library is the biggest library in the country, students claim the availability of very few books which are in high demand, and consequently tend to use the Internet, because it is convenient, less time consuming, gives them 24 hour access, can be accessed from anywhere, and makes it easier to locate what one looking for.

However, the main reason for this growing preference of information on the Internet over printed materials is the fact that most of the printed materials in the libraries are outdated. Lack of access to updated and

relevant materials, both in type and in quantity, i.e. books, journals and the like has also been mentioned as another reason.

The following comment by Tigist can be a very good example of the above notion:

> Even if I managed to get the books written on the topics I am looking for, they are bound to be some 10-15 years outdated. So I find it easier to rely on the Internet where I can get books, journals, and articles from the most recent editions.

i. Internet Vs Other Traditional Media (Print)

The respondents also stated that other traditional media like books, and printed journals are not easy to maneuver when looking for specific information. According to these respondents, it is easier to get specific information with the click of a mouse on the Internet, rather than go through pages and pages of books.

The importance of flexibility and expediency of Internet is clear in the following comment by Meseret, a first year developmental psychology student:

> If I needed to know about a specific topic I have to read whole chapters about the topic but the Internet only needs the key search words and can give me the Information I

> want without bothering with all the unnecessary information.

As shown in the above comment, perceived ease of use is a major factor in choosing the Internet over other traditional media. Atkin, D. et al (1998) defined perceived ease of use as the extent to which a person believes that using a technology will be free of effort. It's also a construct of TAM, where it has a significant influence on usage of and intensions to use a technology (Atkin, D. et al (1998). Thesesrelationships hold true in the context of the Internet and the World Wide Web (Brown, 2002).

Tesfaye was among the two instructors who were interviewed. He expressed the students' dependency on the Internet as follows:

> Students depend on the Internet gamut from the smallest class assignments to their graduation thesis. This is particularly apparent in their bibliography, for many of the references come from the Internet.

A very peculiar comment was made by another informant, Tigist:

> I used to have a real problem going through books at the library because I am allergic to dust particles. But with the Internet that is no longer a concern.

ii. Information accuracy and verification attempts

Most of the interviewed students treat information from the Internet as genuine and reliable. Mulugeta, a first year linguistics student is among the many students with the above opinion.

> I don't usually have doubts about the accuracy of the academic information I obtain from the Internet.

When asked further whether he feels if people deliberately posted wrong information to advance their views, he answered with a puzzled look:

> Of course if it is a political or religious opinion I would expect some level of bias but I wouldn't expect such things in the academic fields.
> Do you think anyone would put out biased "academic information"?

Although the above statement seems a bit naïve, it was true for most of the respondents as the majority of them voiced their confidence on the accuracy of any "academic" Internet posted information.

The rest of the students, who were not as convinced about the accuracy of all information they get from the Internet, reluctantly stated they know they could get feedback on the credibility of the author from the addresses available on some of the sites but rarely do so. Alemu, a second year geography student, said:

> I know better than to trust everything on the Internet to be true and genuine but when it comes to checking the credibility I find it time consuming and usually don't stress about it, as long as it is relevant to my intended purpose.

Another comment by Zeray, a first year Gender studies student:

> My friends tell me I have to be careful about wrong and misleading information on the Internet but we don't know how to verify if the information is correct or not. So I usually refrain from using the information I get from the Internet for my assignments and research.

A look at the above statements tells us that lack of know-how prevents students from getting all they can from the Internet; while some may have the skills necessary to check the credibility of information, they lack the initiative to go through with the checking.

Although these respondents are aware of some of the means to verify the credibility of information, very few of the students showed either the initiatives or the know-how needed to go on and check the credibility of the information.

One very exceptional case was that of Mindaye, a first year MBA student, who said:

> I check the credibility of information by the provided address and also by going to other printed journals and documents to support the validity of the information.

The above comments from the students showed how overly confident students are on the information the Internet provides them and this can be counter productive to their studies. It was also evident from the findings that many students were unaware of the possibility of misleading information on the Internet.

As stated clearly in Madson and Nilsson, when on the Internet one has to be very critical of the massive flow of information that comes across. Not everything is true and even if the person who places the information has done so with the best of intentions, it is easy to make mistakes. (Madson and Nilsson, 2004).

4.2.3. Impediment and Constraints

Although a great proportion of the sampled students showed preference for Internet use, it is not to say there are no problems faced in that area. Among the pressing problems faced by the respondents during online information gathering, some are presented as follows:

i. Financial constraints

Most sample respondents stated in the interview that they find it difficult to come up with the funds necessary to cover the expensive connection charges they had to pay at the Cybercafés. Lack of Internet access at home and the poor Internet connections on campus have been found one of the impeding factors which crumbled the chance of the students to get their desired information. Yonas, a second year sociology student, corroborates the above notion:

> It is somewhat difficult to download large data owing to the poor Internet connection which compromises the satisfaction of students because of the higher cost associated with it.

Another problem mentioned by students was that some articles on the Internet give access to subscribed viewers only. As Meseret, a first year development student, said:

> There are times when I need some information and I have to pay a subscription to get that specific information. That turns me off because I can't afford to pay the charge.

ii. Lack of skill in searching for information

Except for two students, the remaining seven students had received no formal training on searching techniques and general use of the Internet. Some of the comments of the respondents help to assert the need for training on utilization of the Internet. Meseret said:

> I feel that I don't have the necessary skill to use the Internet very well; I would like to be trained on how to use the Internet more effectively.

Ermias, a second year social work student, added:

> I know how to search for information on the Internet using the known search engines like Yahoo, Google and the like but…I would like to become more skilled in using advanced searching techniques and become acquainted with modern search systems.

As shown above, most of the problems faced by students stems from a lack of required skills. The importance of formal training to help students use the Internet effectively is also emphasised in Ndahi (2003), and the inevitable situation most students find themselves in is clearly captured in the following statement by Justin, (1995), that "many users often wind up chasing their tails when they try to fetch information".

iii. Information Overload

From the participants of the in-depth interviews, half reportedly found it hard to screen vast amounts of information on the Internet. Zeray expresses his frustration by saying:

> Everybody says the Internet saves time and is a very quick way of finding information but I don't agree with

> that, because when you search for something the search result usually brings a hundred related topics and its very time consuming and tiresome to look for what I want.

Mindaye, sharing Zeray's frustration, gave the following comment:

> Most of the time the results bring unnecessary information and to look through all the junk and the other unrelated stuff is a real time killer. I think its better to go to the Internet only if I can't find printed materials related to my search topic.

4.2.4. Student perception, including impact on studies

Most students in the study were wary of the effects of Internet usage on their academic performance. A representative comment of this view is Mulugeta's:

> I think it makes up for all our lenience on, say for example, deadlines in a way, because if you are pressed for time you just search for a few things and without reading vastly you might get away with compiling what you found, but if you were to refer to books, you involuntarily read a great deal, thereby being able to look at the broader ideas and not just pinpointed topics.

Another group of respondents felt very optimistic about the effects of the Internet and its impact on their way of learning. Tigist is among this group.

> The Internet simply gives the best help there is to students. There's just no way could we be able to come up with enough materials to do assignments in a short period of time and consult as many books as possible if we didn't have the Internet.

Yonas adds humorously to this:

> I wonder how we made it this far without the Internet!

Following is a separate look at the positive and negative effects of the Internet as perceived by students.

i. Positive impacts

a. Wider information availability

According to respondents, the Internet has made it possible for them to consult a wider variety of publications on topics which could otherwise be very difficult and even impossible in some cases. Meseret's comment supports the above statement.

> Finding the relevant books can be difficult but you can always find information from the Internet about literally anything.

b. The Internet as a time saving alternative

Whereas students had to spend hours and even days to get information from published journals and books in the past, the Internet has made searching for information a click away.

But this advantage of the Internet holds true only if students demonstrate good searching skills. As described in the previous section,

some of the students' comments indicate that the reverse can be true if students don't know how to look for information on the Internet.

ii. Negative Impacts

a. Misinformation

The high reliance on information from the Internet makes students liable to misinformation. Most students are not aware of the level of bias and misinformation and take everything they get from the Internet for granted and as true, which can lead them to wrong conclusions in their studies.

b. Temptation to commit plagiarism

A lack of knowledge on how to make citations and the relative ease of the features of the Internet to copy other peoples work as one's own makes it very liable to abuse by students. Although the respondents did not directly own up to the question, due to the sensitive nature of the issue, all agreed with the appealing nature of the potential for plagiarism.

Yonas's comment goes a long way to assert this view:

> I have never copied somebody else's work without citing a source just because it serves my purpose, but I know many students who do it especially when they don't have enough time to properly research a topic. It is something we hear about a lot.

Another side to this situation is students' unknowingly committing plagiarism Tigist is one of these students:

> When I was an undergraduate student I didn't know about plagiarism and usually made no reference to the authors, but in my postgraduate studies I have been exposed a lot to the issue and don't copy others because I now know about it and that it is unethical.

Alem, who is the other instructor from the social sciences faculty, expressed her concern over the issue of plagiarism as follows:

> The fact that we have very limited ways of tracing the works of students makes it hard to control the practice. Although there are some methods to check plagiarism, those methods are simply not available to us. There is also no clearly stated guideline to follow in case of such occurrences.

Tesfaye also shared this view and added the following statement:

> The issue is further complicated because we come across students who commit plagiarism unintentionally. I try to get the message of proper conduct across to my students but I don't think that is enough to make a big difference. Care should be taken especially when you look at documents that are to be made available to the public.

According to studies carried out by Alur & Krupar (2001) and Scanlon & Newman (2002) as cited in Ndahi (2003):

> With the Internet, regardless of its usefulness in terms of assessing information for research and assignments, there is the tendency of plagiarism.

As seen in the above comments by both students and instructors, the issue of plagiarism is not given much attention by the University. Thus the students commit plagiarism both knowingly and unknowingly. However, with the advent of increasing Internet use, it is an issue that should be taken seriously, not only by the students but by the University.

Another important impact of Internet use on the students' intellectual capacity was mentioned by both the above instructors:

> Perhaps a very pertinent problem would be the effect it is having on the students reading habits, their ability to come up with original works on their own and their analytical skills.

4.3. Findings of the focus group discussions

The four focus group discussions held together with the in-depth interviews confirmed most of the views expressed in the interviews. Following is a tabular presentation of the findings of the focus group discussion.

Table .1 The Findings of the Focus Group Discussion.

FGD Guidelines	Focus group 1	Focus group 2	Focus group 3	Focus group 4
Internet use ♦ Features used ♦ Purpose of use ♦ Place of use	♦ websites and e-mail ♦ Find it easy to use ♦ Research, assignment and coursework ♦ Campus library	♦ Website ♦ Need more training ♦ Research ♦ Internet café and library	♦ email and web sites ♦ are well trained ♦ research ♦ library	♦ web sites ♦ find it easy to use ♦ coursework ♦ library
Dependency on Internet ♦ Attempts to check accuracy	♦ Depend equally on both the Internet and other media ♦ Sometimes try to check with the addresses	♦ Highly depend on the Internet ♦ Don't know about checking methods	♦ Highly depend on the Internet ♦ Visit library listed websites but don't check	♦ Depend on both the Internet and print media ♦ Sometimes crosscheck with books
Problems faced	♦ Virus ♦ Time constraint ♦ Data reliability ♦ Denial of access to some sites because of the need for subscription	♦ Lack of training ♦ Time constraint ♦ Takes them long time to search for information	♦ Data reliability ♦ Time constraint ♦ Financial constraint	♦ Need more training ♦ Denial of access to some sites because of the need for subscription ♦ Time constraint
Impact of Internet use on students' studies	♦ Definitely helped them to do better works and get differing opinions on their subject matter.	♦ Useful to get as much information as they can digest ♦ Helps them to get updated information about their field of study	♦ Solved many of their problems relating to time constraint, information availability and ease of carrying out their studies.	Definitely helped them to do better works and get differing opinions on their subject matter.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSION

Numerous studies over the past decade have found a nearly universal and positive association between usage of the Internet and its impact on students' education. However, research investigating the nature of this relationship has been somewhat scarce in Ethiopia.

This research, therefore, attempted to examine the level of penetration and impact of Internet usage amongst postgraduates at AAU. Generally, it aimed to pinpoint the extent to which students rely on the Internet, the problems associated with usage of Internet for academic purposes and their perception of how it affects their way of thinking for the better or worse.

The findings reveal that the overwhelming majority of the postgraduates at AAU use the Internet for many purposes, and have realized the benefits the Internet has to offer. Both the focus group discussions and in-depth interview results showed that the usage of the Internet played a pivotal role in impacting on students' academic life. This corroborates with the findings of Siyanbola and Awoleye (2006), who reiterated that the success of Internet utilization was greatly related to the user's attitude towards the Internet.

The study also discovered that the AAU postgraduate students rely greatly on information obtained from the Internet as a supplementary source of information for their coursework. Although it can't be said that the Internet has yet reached a point where it has come to replace other traditional print media like books and journals, the majority of students interviewed in the study believed the Internet was of great importance for their education. The benefits as mentioned by the informants are highlighted as follows: generally the students believe it serves as an information database, helps their search for more information on a particular subject, it widens knowledge, it gives information on education, it is used for information development, it improves academic performance, it is used as a research tool, and provides a solution for assignments.

Although students use the Internet at different places such as at Cybercafés and offices, the University library has been found as the main point of access for many of them. The two major features of Internet most used by students were e-mail and the World Wide Web. Whereas e-mail is mostly used to forward documents among colleagues, the web is more dominant in areas of research and assignments.

Even though specific database lists are provided by the university, most of the students said they prefered to use commercial sites. This issue raises a question of reliability of the information acquired from such sites. However, a look at the students' ability to check the credibility of sources and accuracy of information revealed a lack of know-how and initiative on the part of the students.

Another issue close to the above is plagiarism. Apart from the relatively easy nature of the Internet to plagiarize, there is also a lack of knowledge amongst students about the consequences of plagiarism, thinking all information on the Internet is free and for their consumption. This finding is in agreement with the results obtained from the in-depth interviews held with the Instructors. The fact that there is literally infinite information on the web makes it hard for instructors to crosscheck students' work for plagiarism. Another important issue raised was the unavailability of software to track for plagiarism on campus. So this leaves a lot in the hands of the students' sense of right and wrong.

The research also found out that there is a growing preference for the use of Internet over books and other printed media. The findings show two main factors as facilitating the preference for Internet over the use of books, journals and the like. The first of these is the lack of available materials for reference in libraries compared to the number of students,

and the fact that almost all the available materials are outdated. This is probably due to the amount and consistency of the budget allotted to the respective libraries. Another significant point is its relative ease and interactive nature that make it a favorite among many students, given they have the access.

Along with the ease and appeal of Internet come various pitfalls that students fail to take into consideration. One such consideration that should be taken seriously is that anyone is able to post articles that promote his/her views without worrying about accuracy and objectivity of the information. In view of the above, unsuspecting students are misinformed and in some cases led to wrong conclusions.

Among the many problems faced by students using the Internet are the facts that the Internet can be very time consuming and expensive, and it is difficult to work with large amounts of information at times. An ever present obstacle that the researcher would like to raise related to this issue is the lack of skill many students demonstrated in using the Internet.

5.2. Recommendation

As with any other technological advancement, the Internet brings with it the responsibility to make proper use of the information it avails. As was

clearly apparent in this research, the availability of Internet access and its uses are not going to reward students with the expected benefits unless the appropriate knowledge exists along with it.

Based on the findings of this study, the following recommendations are forwarded to improve the effective use of the Internet medium in education sector:

- Empowering students and making enough assistance available to students for using the Internet. Since the students alone can decide on the way they use information from the Internet, it is essential that they be cautious and well aware of the nature of the Internet.

- The government also can intervene through decision making, by incorporating media literacy courses in the university curriculum.

- Plagiarism is also identified as a potential concern area; educating students about plagiarism and development of systems to control its practice needs to be addressed. For example, there is software available that can be used by lecturers to check that students have not plagiarized, as long as they submit their work electronically. Such software is widely used in higher education institutions in

the UK and USA. The employment of such mechanisms in the institution would help ease the problem.

- Nowadays, the concern over copyright and patent rights is being raised more and more on many public platforms. This concern should also extend to the area of Internet use. As the number of Internet users (both within and outside the student community) increases, so should the level of media literacy. Since Cyber crimes like plagiarism could bring serious repercussions, the Internet users should be well aware of the legal considerations that should go along with it.

- Another key area where the government and other organizations could intervene is the provision of affordable Internet access to students.

- The availability of other traditional media like books and journals in libraries should also be given more attention. The allocation of an appropriate budget for print media would help to ease the over-dependent behavior of students on the Internet.

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Appendix I

Focus Group Discussion Guideline

What academic purposes do students use Internet for?

What functions of Internet do students use?

What are the perceptions of students in using the Internet/ web materials to impact their education?

What are the attitudes of the students in using the Internet? (ease of use, affinity)

To what extent do students use the Internet or web compared to other traditional media?

How do students perceive Internet credibility?

Do the students verify information obtained from the Web?

Appendix II

Interview Guidelines f or the In-depth Interview (Students)

How did you first come to know about the Internet?

- When did you first start to use the Internet?

For what academic purposes do you use the Internet?

- What features do you use most?

How do you use the Internet?

Compared to other media like books and magazines or print journals what does the Internet provide you?

- Compare your use of Internet and other Print media?

Describe your usage of Internet in terms of your skill?

Do you use specific search engines or databases provided by the AAU Library related to specific study area while you search?

What benefits do you get from the Internet to enhance your education?

Describe your opinion of using Web for your research?

- When you search for materials on the Web how do search? Describe the process.
- Where do you usually start your search?

How do you see the information you get from the Internet compared to print media?

- How do you use the information you get?

What are the impediments of using Internet for your studies?

Do you know about the idea of Plagiarism?

What is your opinion about Internet?

How confident are you in the accuracy and relevance of information you get from the Internet?

- How do you evaluate the materials you find from the Internet?

How easy is the Internet for you to use? Describe the situation as clearly and with as much detail as possible.