Use of the internet by undergraduate third-year students of the Faculty of Humanities, Development and Social Sciences at the University of KwaZulu-Natal, Pietermaritzburg campus

By

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Dedication

This thesis is dedicated to my dearest mother, Nophikelelo Audrey Dlamini- Kheswa (*the late)*, who will always have a special place in my heart

My cousin, Zandile T. Kheswa (*the late*)

and also my grandfather, Mr. Wilson M. Kheswa (*the late*), who will always be my role model and his values, dreams and wisdom will always live through me.

I wish you lived long enough to see me progress and be the person you wanted me to be (I will always love you).

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Abstract

The purpose of this study was to investigate the use of the internet by the Faculty of Humanities, Development and Social Science third year students at the University of KwaZulu-Natal, Pietermaritzburg campus. The study tried to establish how often students used the internet; what did students use the internet for; what internet services did students use the most and why were those services used. Furthermore, the study investigated what information services were relevant and important for students; whether students had the necessary skills to use the internet and what problems they experienced while using the internet. Conclusions were drawn and a set of recommendations were made based on the findings of the study.

The study population comprised 330 Faculty of Humanities, Development and Social Science third year students. A total number of 254 undergraduate third year students responded, which gave a very good response rate of 77%. The researcher employed a triangulation approach where both qualitative and quantitative data were collected. For quantitative data collection the researcher used a questionnaire. An interview schedule to obtain qualitative data from the Director of Information Communication and Technology was used. The data from the interview was used to support the data from the questionnaire. The quantitative data was analysed using SPSS and the qualitative data was analysed using thematic content analysis. To maintain validity and reliability the questionnaire was pre-tested to non Faculty of HDSS undergraduate students at the UKZNP.

The findings of the study showed that a majority of HDSS undergraduate third year students at UKZNP used the internet on campus with less than half of them also using the internet off campus. The most relevant and important internet services for third year students were e-mail, Web and telnet. However, the most used internet services by third year students were the Web, e-mail, social networks and telnet. A majority of students used GroupWise e-mail even though they had other e-mail accounts. In addition, a majority of students used FaceBook and students preferred Google more than other search engines. There were a number of challenges students experienced regarding the use of the internet. Such challenges included a limited number of computers in the LANs, slow internet connections, restricted access to certain sites and a lack of training on how to use the internet on campus.

List of abbreviations and acronyms

AAU: Association of African Universities

AOC: American Online, CompuServe

ARPA: Advanced Research Projects Agency

ARPANET: Advanced Research Projects Agency Network

DIT: Department of Information Technology

E-mail: Electronic mail

Faculty of HDSS: Faculty of Humanities Development and Social Sciences

FTP: File-Transfer Protocol

Gbps: Gigabytes per second

GDP: Gross Domestic Product

HE: Higher Education

HEI: Higher Education Institution

HTML: Hypertext Markup Language

HTTP: Hypertext Transfer Protocol

ICT: Information and Communication Technology

ICTD: Information and Communication Technology Division

IDRC: International Development Research Centre

IM: Instant Messaging

IRC: Internet Relay Chat

IT: Information Technology

LAN: Local Area Network

MIT: Massachusetts Institute of Technology

Mbps: Megabytes per second

MUD: Multi User Dungeons

MUT: Multi User Talk

NASA: National Aeronautics and Space Administration

OCS: Online Cognition Scale

PC: Personal Computer

PMB: Pietermaritzburg

SA: South Africa

SADC: Southern African Development Community

SD: Standard Deviation

SPSS: Statistical Program for Social Science

SSA: Sub-Saharan Africa

SRC: Student Representative Council

TCP/IP: Transmission Control Protocol and Internet Protocol

UK: United Kingdom

UKZNP: University of KwaZulu-Natal, Pietermaritzburg

UNIX: UNiplexed Information Systems

US: United States

USENET: Users network

WWW: Web or World Wide Web

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Chapter 1

Setting the scene

1.1 Introduction

The internet is an international computer network through which computer users all over the world can communicate and exchange information. The network cuts across all forms of segregation, such as gender, religion, race and age in its ability to connect people. Grimes and Borman (1997:1) argue that the internet is used mostly for accessing the wealth of information from academic research to stock market information. Moreover, McQueen and Fleck (2004) argue that the internet is considered as the network of networks which enables people with appropriate access to logon to remote computers, access global communiqué boards, search for information, transfer files or data and send electronic mail. Thus the main purpose of the internet is to connect people and share information.

According to Jones (2002), students at tertiary institutions use the internet much more than the general public. Jones (2002) further argues that the use of the internet by students has grown gradually in such a way that it is now used as the primary source of information especially in tertiary institutions. McQueen and Fleck (2004) argue that the swift increase in internet usage has transformed the flood of information (information overload) in schools, colleges and universities.

Luambano and Nawe (2004) maintain that the internet offers users the opportunity to search and retrieve information more quickly than doing so in a physical library. Some of the internet services, such as the Web, have been improved by the development of advanced versions, such as Web 2.0, which makes Web searching easier by providing short cuts (Cornu, 2005). Moreover, the availability of electronic databases on the internet has changed the way university students access information. Kwanya, Stilwell and Underwood (2009) believe that technological advances brought about the concept of the digital Library 2.0 which is accessible from any computer with the internet access, whereas a physical library has a fixed location. Kwanya, Stilwell and Underwood (2009) argue further that the number of technologically skilled users is rapidly increasing. These users find it easier to search

Google for information than to drive to the library, leading in due course, to a threatening reduction in the number of library visits. However, even physical libraries have computers with useful databases which are available to their users.

The internet facilitates global information systems, providing access to a variety of services (including file transfer protocol (FTP), World Wide Web (WWW or Web) and electronic mail (e-mail)) that have revolutionized the way we communicate, inform, entertain and enrich ourselves (Mutula, 2005). According to Shezi (2005), Chachage (2001: 226), and Luambano and Nawe (2004: 13) the internet has changed almost all aspects of our lives.

Students also use the internet for non-academic purposes such as communicating via e-mail and other social networks (Facebook, Twitter and MySpace). As part of their leisure and self-enrichment activities, students download music, games software, movies and other resources which are of interest to them. However, the use of social networking tools is curtailed by institutional policies regulating access times (Kader, 2007). This study was conducted to establish how the internet was used by the Faculty of Humanities, Development and Social Science (Faculty of HDSS) third year students at the University of KwaZulu-Natal, Pietermaritzburg campus (UKZNP).

1.2 Purpose of the study

The purpose of the study was to investigate the use of the internet by the Faculty of Humanities, Development and Social Science third year students at the University of KwaZulu-Natal, Pietermaritzburg campus.

1.3 Statement of research problem

Technological advances have brought and are still bringing a variety of information sources and improved internet services that can be used for teaching and learning and for social reasons as well. Students at university have “free” access to the internet and the services it provides through the university libraries and numerous computer laboratories. While various studies have been done in other contexts, both in South Africa and internationally, little is known about student use of the internet on the Pietermaritzburg campus of University of KwaZulu-Natal, despite it evidently providing a significant opportunity for learning and teaching. The problem addressed by this research is what undergraduate Faculty of

Humanities, Development and Social Science, University of KwaZulu-Natal's third year students use the internet for and what internet information services are relevant and important to them.

1.3.1 Research questions of the study

This study was guided by the following research questions:

- How often do students use the internet?
- What do students use the internet for?
- What internet services do students use the most and why?
- What information services are relevant and important for students?
- Do students have the necessary skills to use the internet?
- What problems do students experience when using the internet?

These research questions are informed by the following broader issues discussed below.

1.3.2 Broader issues to be investigated

The broader issue in this research is the digital divide which is defined by Mutula (2005) as "inequalities in access to, and utilization of Information Communications Technologies (ICTs) and computer literacy". It is further defined by Servon (2002) as the imbalances in physical access to technology as well as the imbalances in resources and skills needed to effectively participate as a digital citizen. In other words, it is the unequal access to information and communication technology by some members of society, and the unequal acquisition of related skills. Arguably, for many students on campus, the divide was likely to have been manifested in a lack of access to computers during their schooling. For example, Strove (2001) stated that most schools in rural areas do not have access to computers which makes it impossible for learners to access the internet. Furthermore, students from under-resourced rural schools do not know how to use computers as they have not been exposed to them and here the divide is reflected in the lack of skills to use the technology (Strove, 2001). Computer literacy goes beyond knowing how to log in and use Microsoft Office Word, Excel and PowerPoint, it also includes knowing how to communicate using the internet and e-mail. In most cases people with excellent computer skills tend to use the internet the most as they know how to browse and teach themselves more about the internet services (Cornu, 2005). It is important to note that some students learn how to use computers when at university and those who do computer-related courses tend to be more skilled. However, as noted above, in

the context of the University of KwaZulu-Natal, the divide is not likely to be apparent in terms of the access to ICTs but rather in terms of the skills required to use the internet.

There is also the continual problem of bandwidth. The bandwidth issue is a major contributing factor to the digital divide in the continent as a whole. This issue might dictate the number of people using computers for internet access or discourage others from using the internet because of the lack of speed and low capacity of the service (Internet World Stats, 2009).

1.4 Rationale of the study

The internet has become a major source of information in an era where information is an important resource. The Faculty of Humanities, Development and Social Science programmes are linked to current social and humanitarian issues and with this in mind, there is plenty of information found in newspapers, multimedia news (radio and television) and the internet which can result in information overload (Eppler and Mengis, 2002). Moreover, information relating to topics covered in lectures is mostly available on the internet (either in databases or on the Web via search engines). The internet has become an integral part of the teaching and learning process in higher education. It is therefore important to explore how undergraduate students make use of the internet as a learning aid and self-enriching tool and here the concept of network literacy (see section 1.5) will be very important as it offers a useful starting point in understanding information seeking in a networked environment. A few years back internet services were not that significant in teaching and learning because they were not as advanced as they are today. There are still some information sources which are not trusted by some lecturers, such as Wikipedia, while other lecturers recommend them (Chachage, 2001).

Arguably, most people who do not use the internet, lack access or skills (Nelson, 2001), therefore this study also seeks to establish whether students have the necessary skills to use the internet and what internet services students use the most. The study seeks to actualize what information sources are of use to students. Since the internet has changed the way we communicate, the study investigated how students use the internet for communication, academic information or other purposes and how often they used it. Similar studies conducted by Shezi (2005) and Kader (2007) on the use of the internet by students, also informed the

current study. For the reasons given, the findings and recommendations of this study will assist in determining the need for using internet services as part of teaching and learning on all campuses at the University of KwaZulu-Natal, as was done in a study at the University of Pretoria by du Plessis, Mostert and North (2004). The information that this study yields could assist the subject librarians and relevant university stakeholders in determining the extent of demand for internet services and the effective use of these resources.

1.5 Conceptual framework

The core concept "network literacy" which is defined by McClure (1994: 115) as "the quality or state of being able to identify, access and use electronic information from the information network," informed the study. Ngulube, Shezi and Leach (2009) point out that despite the advantages of the internet, use is limited due to the poor level of network literacy of some users. Network literacy consists of four major areas as follows:

- A knowledge of information resources available on the internet;
- The skilful use of ICTs to access networked sources;
- The judgment of the relevance of information sources; and
- The skill in the use of computer-mediated communication tools.

These areas are diagrammatically depicted in the model (Figure 1) below.

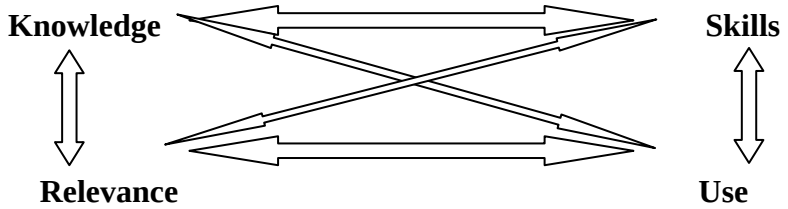


Figure 1: Network literacy model

(Concepts adopted from Ngulube, Shezi and Leach 2009)

According to Ngulube, Shezi and Leach (2009), network competence offers a useful starting point in understanding information seeking in a networked environment. Effective participation in the information society requires one to be information literate. The four dimensions of information literacy that assist people in acquiring, processing, understanding and utilizing information to solve problems, make decisions and become effective lifelong learners are traditional literacy, computer literacy, media literacy and network literacy (Hu, 1996; Martin, 2006; McClure, 1994; Wen and Shih, 2006). Being network literate is thus a

crucial component of the broader concept of information literacy. The current study examined the extent to which social science students at the University of KwaZulu-Natal, Pietermaritzburg campus were network literate. This conceptual framework was useful and effective in answering the research questions listed earlier as their formulation is based on this framework. The network literacy concept was also helpful when analyzing data as the study was guided by its four major areas.

1.6 Limitations and delimitations

The delimitation of the study was the exclusion of other University of KwaZulu-Natal campuses such as Edgewood, Howard College, Medical School and Westville campuses. Furthermore, the study focused on third year undergraduate students of the Faculty of Humanities, Development and Social Science, as opposed to students at other undergraduate and postgraduate levels and students from other faculties. The reason for the focus on the Faculty of Humanities, Development and Social Science undergraduate third year students is that their modules are closely linked to general current social and humanitarian issues. Furthermore, third year students are at a senior level of undergraduate study and are therefore required to conduct more research than first or second year undergraduate students. Also, this study did not focus on the use of the internet for accessing library electronic databases.

1.7 Definition of key terms

As mentioned earlier, **digital divide** is defined by Mutula (2005) as the inequalities in access to and utilisation of ICTs. It is further defined by Servon (2002) as the imbalances in physical access to technology as well as the imbalances in resources and skills needed to effectively participate as a digital citizen. In simple words, it is the unequal access by some members of society to ICTs, and the unequal acquisition of related skills.

Information overload is defined by Eppler and Mengis (2002) as the abundant availability of information at hand in different forms.

Internet is defined by Maxwell (2009) as an international computer network through which all computer users worldwide can exchange information and communicate.

Use is defined by the new *Collins Concise English Dictionary* (McLeod and Hanks, 1982) as: "to put into service or action; employ for a given purpose." Use also refers to behave towards in particular way especially for one's own ends". Use is further defined as a means of accomplishing a purpose or achieving a result (Pearsall 1998: 2038).

Abbott (1989: 1) in the library and information services context, points to the complexity of the term "use" when noting the main definition which includes access to information, the ability to use library resources profitably, consumptive and non-consumptive use, incremental use, and desired use. For this study the Collins dictionary definition of the term "use" noted above is used and refers to how the internet is "put into service or action; employed for a given purpose" by third year undergraduate students of the Faculty of Humanities, Development and Social Science.

1.8 Overview of the study

Having briefly introduced the topic of the study in Chapter One through the research problem, the purpose of the study and the research questions, an overview of subsequent chapters is as follows:

Chapter Two reviews the related literature, which involves identification, location and analysis of documents or materials containing information related to the research problem. Chapter Three focuses on the methodology, outlining the research method used in the study. Furthermore, in this chapter the population of the study is identified and the instruments used for data collection are also described. The chapter also describes the process of data collection and finally, presents the methods used for data analysis. Chapter Four presents the findings. Chapter Five discusses the findings from the previous chapter in relation to the relevant literature. Lastly, Chapter Six concludes the study, and presents recommendations that shall inform the nature of internet usage by students in universities. This section will also demonstrate how the study has answered the research questions.

1.9 Summary of the chapter

In this introductory chapter the title of the study was briefly outlined. This chapter outlined the research problem, reasons for choosing the research topic and defined the key terms relevant to the study. Furthermore, the broader issues and the conceptual framework of the study together with the research questions and the delimitation as well as the limitations of the study were discussed.

Chapter 2

Literature review

2.1 Introduction

This chapter covers the literature that is related and relevant to the study. Prytherch (2000) argued that a literature review is a survey of progress in a particular aspect of a subject area over a given period; it may range from a bibliographical index or a list of references, to a general critical review of original publications on the subject covered. On the other hand, Gash (2000) defined a literature review as "a systematic and thorough search of all published literature in order to identify as many items as possible that are relevant to a particular topic." Usually the publications reviewed include materials such as theses or dissertations, books, reports and journal articles.

According to Thody (2006) a literature review aims at justifying the research by showing that other researchers have researched the topic or researched it in another way. The literature review pays homage to those who have gone before the researcher and whose work has influenced his/her thinking. Thody (2006) further argued that the purpose of the literature review is to reveal the current researcher's topic. A literature review also assists in showing how the researcher generated his/her conceptual framework and provides a general overview of the area of his/her research.

Kaniki (2006) argued that "a literature review involves identifying relevant literature or sources of relevant information (bibliographic access), physically accessing the most relevant literature (document delivery), reading and analysing these works." With this in mind, reading the literature helps the researcher focus on important issues and variables that influenced the research question. This study reviews the literature that relates to students' use of the internet.

For the past three decades the evolution of academic institutions has been greatly influenced by the elevated use of the internet. Ellsworth (1996) stated that students quickly grow adept at finding and retrieving remote information and then go on to develop more sophisticated search and retrieval strategies. Furthermore, by using the internet students can learn

educational independence and intellectual autonomy. According to Schofield and Davison (2002) prior studies of internet use in schools have made the point that it is important to consider not only how much use is made of the internet by educators and students but also how regularly the use occurs. Thus a brief history of the internet is provided as a contextual background to the study.

2.2 History of the internet

The internet is defined by Maxwell (2009) as an international computer network through which all computer users worldwide can exchange information and communicate. Leiner, *et al*. (2004), argue that the internet has transformed the computer and communications world like nothing has ever done before. In 1958, United States President, Dwight Eisenhower, founded a special agency under the Department of Defence, the Advanced Research Projects Agency (ARPA). The agency's mission was to develop longterm highly innovative and hazardous research (Cantoni and Tardini, 2006). In August 1962, J. C. R. Licklider of the Massachusetts Institute of Technology (MIT) discussed his Galactic Network concept where he envisioned a globally interconnected set of computers through which everyone could access data and programs quickly, from any site (Leiner *et al*., 2004). In essence the evidence of this concept is what the internet is today.

The internet was developed in the United States (US) in 1970 as a network for use by the Department of Defence; it was then called the Advanced Research Projects Agency Network (ARPANET) (Cantoni and Tardini, 2006). It was initially developed as an experiment and was used to support communication within the Defence Department. Boswell (2005) states that the usefulness of computer networking especially e-mail, as exhibited by the Department of Defence on ARPANET, stimulated the interest of other communities and disciplines. Therefore, by the 1970s computer networks had begun to develop wherever funding was available.

2.2.1 A brief timeline of internet development

A brief timeline of how the internet developed as adapted from Boswell (2005) is as follows:
1957: The US Defence Department formed a small agency called ARPA to develop military science and technology.

1961-1965: MIT started to share research information in small, phone-linked networks. ARPA was one of their major sponsors.

1966: The first ARPANET plan by Larry Roberts of MIT-Packet switching technology is used.

1969: The US Department of Defence commissions ARPANET for network research. The first node to node message was sent from the University of California, Los Angeles to Strategic Resources Inc.

1971: More nodes including Harvard and National Aeronautics and Space Administration (NASA) join the network.

1973: ARPANET goes global.

1974: Data is transmitted more quickly and efficiently with the design of the transmission control program.

1976: UNiplexed Information Systems (UNIX) is developed; Queen Elizabeth sends out her first e-mail message.

1979: Users network (USENET), the mother of all networked discussion groups, is developed.

1982: Transmission Control Protocol and Internet Protocol were developed - (TCP/IP).

1984: Number of hosts is now 1,000, with more being added every day.

1985: The first registered domain is Symbolics.com.

1987: Number of hosts breaks the 10,000 mark.

1988: First large-scale internet worm affects thousands of hosts.

1991: Tim Berners-Lee develops the WWW.

1993: The WWW's annual growth is now at a staggering 634%.

1994: ARPANET celebrates its 25^{th} anniversary.

1995-1997: Real Audio introduces internet streaming technology, dial-up systems emerge (American Online, Compuserve), the internet backbone (the physical components of the internet) are strengthened, Microsoft and Netscape fight for WWW browser supremacy; there are now more than 70,000 mailing lists.

1998-present: The internet continues to experience staggering growth. More people use the internet to get connected to others, find information, conduct business and share information than ever before in history. The ARPANET officially ended in 1989 and it was eventually superseded by the internet in 1992. According to Boswell (2005), millions of people from all corners of the globe use this gigantic network. Gelernter (2001) stated that the internet is often referred to as the network of networks or a network of interconnected computers. Tim

Berners-Lee created the hypertext transfer protocol (HTTP) and its work was closely linked to the introduction of the WWW (Maxwell, 2009). The following are functions that HTTP is able to perform:

- Write an internet address;
- Scan the internet for sites linked to the addresses; and
- Automatically retrieve the documents from the addresses.

Deak (2004) claimed that Berners-Lee created the browser which he named the WWW using the hypertext markup language (HTML) to create webpages which people could access. Therefore, the next section will provide a brief discussion of the use of the internet today.

2.3 The internet today

Today internet access is more available than it was three decades ago. Gelernter (2001) perceives the internet as a communication tool enabling users to perform various activities such as chatting, searching for information, playing online games and joining support groups amongst other things. It has been noted by Amichai-Hamburger (2005) that people communicate from all corners of the world every single day using the internet.

According to the latest statistics (last updated 30 June 2010) shown by Internet World Stats (2010) there are approximately 1,733 million internet users in the world; in South Africa, there are approximately 5.3 million internet users. The statistics further reveal that the growth rate of internet users in the world since 2000 is only 380.3% compared with the massive growth of 1,392.4% in Africa, with South Africa at 120.8%.

According to Internet World Stats (2010) most users of the internet are from first world countries such as the US, Canada, Europe and Great Britain. However, Asian countries such as China, Hong Kong, India and Japan are fast becoming some of the largest internet users. In Africa, statistics show that the internet is mostly used in Egypt (15.4%), (percentage reflects the extent of the internet use by countries in Africa) Nigeria (39.6%), Morocco (9.4%), South Africa (4.8%) and Sudan (3.8%) (Internet World Stats, 2010). Internet users in South Africa for the year-end in 2008 were estimated at 4,590,000 according to the South African leading technology research organisation World Wide Worx (Africa Internet Stats, 2008). Table 1 below illustrates the world internet usage as of 30 June 2010.

Table 1: World internet usage adapted from the Internet World Stats (2010)

WORLD INTERNET USAGE AND POPULATION STATISTICS						
World Regions	Population (2010 Est.)	Internet Users Dec. 31, 2000	Internet Users Latest Data	Penetration (% Population)	Growth 2000-2010	Users % of Table
Africa	1,013,779,050	4,514,400	**110,931,700**	10.9 %	2,357.3 %	5.6 %
Asia	3,834,792,852	114,304,000	**825,094,396**	21.5 %	621.8 %	42.0 %
Europe	813,319,511	105,096,093	**475,069,448**	58.4 %	352.0 %	24.2 %
Middle East	212,336,924	3,284,800	**63,240,946**	29.8 %	1,825.3 %	3.2 %
North America	344,124,450	108,096,800	**266,224,500**	77.4 %	146.3 %	13.5 %
Latin America/Caribbean	592,556,972	18,068,919	**204,689,836**	34.5 %	1,032.8 %	10.4 %
Oceania / Australia	34,700,201	7,620,480	**21,263,990**	61.3 %	179.0 %	1.1 %
WORLD TOTAL	6,845,609,960	360,985,492	**1,966,514,816**	**28.7 %**	444.8 %	100.0 %

Table 1 shows that Africa has the lowest percentage of penetration of population in relation to internet access. South African former president, Thabo Mbeki, stated at a G-7 meeting in 1995, that:

> there were more telephone lines in Manhattan, than in sub-Saharan Africa, one must take cognisance of the fact that technological advancement cannot be ignored and that there are various means of bringing the internet to the people such as cyber-cafes (Kader 2007:27).

Cornu (2005) suggested that a dual approach be applied; that is exploring technological possibilities and ways of using the internet. Cornu (2005) further argued that rather than counting the number of users the objective should be to look at how people use the internet and how it really has an impact on the individual. The internet as a means of communication has become the latest fashion for both young and old. It is made up of various services such as e-mail (e-mail), WWW and the file transfer protocol (FTP) (Buys, 2004). The most frequently used tool by internet users is the WWW (Maxwell, 2009). According to Krol (1994) webpages contain anything from personal information to broad topics of interest.

Arguably, anyone with access to the internet can create webpages. Webpages are used to give general or personal information, advertisements for various resources and are added and removed constantly making the information fluid rather than constant.

According to Banks (1997) the Web is a service of the internet that the majority of newer modern users, as well as those who have never been online, think of as the internet. This is understandable because the WWW gets the most media coverage. There is an exceptionally large range of information available on the internet; information is being added and modified constantly (Harris, 1997). Boswell (2005) argued that the internet is widely accessible to many millions of people all over the globe and information on anything can therefore be accessed instantly. Students can use the Web to search and retrieve information for various reasons such as for academic purposes (online literature) and non-academic purposes (entertainment). The next section will give a brief history on the introduction of the internet in higher education institutions such as universities and colleges.

2.4 The internet in higher education institutions

Nowadays, the expansion of the internet is, undoubtedly, widespread and has developed a new socio-economic environment, where information, innovation and knowledge play a primary role. Through its multiplicity the internet constitutes probably the best way for accessing entertainment, learning and information, as well as for establishing socialization processes and communication among people (Papanis, Giavrimis and Papani, 2010). In this discussion of the internet in higher education institutions the emphasis is on African and South African colleges and universities since the current study was conducted in South Africa.

According to Jones, Johnson-Yale, Millermaier and Perez (2008) universities provide an environment for technological diffusion. Goldfarb (2006) argued that in the 1990s US universities “taught a generation of students how to use the internet and fostered its diffusion.” During that time, universities provided the necessary programs and equipment for students to go online and use the technology to which they may not have otherwise had access (Jones, Johnson-Yale, Millermaier and Perez, 2008). Goldfarb (2006) argued that many universities required students to use the internet for various administrative and course-related functions, which impelled students to use a technology they may not have had the

inclination to try or incorporate into their academic lives. Goldfarb (2006) further argued that universities may also have aided in the diffusion of the internet by emphasizing its value and its potential uses for "online commerce, online communication and online information searching." Most African universities began using the internet during the late 1990s compared to US colleges and universities which introduced the internet in the early 1990s.

The importance of ICT and the internet in tertiary education is generally recognized by higher education institutions. According to Bon (2007) the internet represents the world's largest knowledge database which is easily accessible through powerful search engines. Bon (2007) argued that the internet can provide access to resources of scientific publications and scholarly information, when students have daily access to computers and the internet with sufficient bandwidth for downloading and exchanging documents over the network. The internet can also improve collaboration and interaction with research groups in other institutes, regions or countries contributing to improved quality of research and education (Hawkins, 2005). The Association of African Universities (AAU) (2005: internet in Africa) shares this vision by stating on their website:

> African universities and researchers are often working in a silo model, insulated from regional actors and drivers of funding and requirements. Through establishing low cost high quality networks a platform for generative discourse can be created leading to improved policy advice, more effective cross pollination of best practices and lessons (AAU, 2005: internet in Africa).

This mode of learning is already used at many African universities, and fills a clear need for the education of people who work during the day, and live in remote areas. Distance learning can be improved significantly by the use of internet and electronic learning environments.

Social constructivism is one theoretical approach that advocates the use of ICTs in education, as it facilitates active student engagement with content, educators and each other, enhances problem-based learning, improves information gathering skills, improves communication between educators and students, ensures the accessibility of coursework and enhances administrative tasks (Johns, 2003; Oblinger and Oblinger, 2005; Rohleder *et al*., 2007). The use of ICTs in education has also been shown to increase the channels of communication and facilitate collaborative teaching and learning (Boulos *et al*., 2006), creating a framework for the social construction of knowledge. These characteristics of the use of ICTs in education

allow students to take greater responsibility for learning, and for educators to act as facilitators of learning.

In Africa, 29 countries have recently defined governmental policies to support ICTs, (Pehrson and Ngwira 2006). Numerous ICT-initiatives and projects are taking place simultaneously in African countries, supported by the World Bank, the International Development Research Centre (IDRC), the European Commission, the United Nations and many other donors (Hawkins, 2005; Steiner *et al*., 2005). Furthermore, according to Steiner *et al*. (2005) 2007 was declared as the year for building science and technology in Africa. Hawkins (2005) notes that African science ministers have backed a set of measures to promote science and technology across the continent. The ministers, who met in January 2007 in Cairo, Egypt, pledged that Heads of State create a Pan-African Intellectual Property Organisation, and designate 2007 as a year for science, technology and innovation in Africa (Cairo declaration 2006). The Cairo declaration (2006) proposed that to achieve this, respective countries had to apportion at least one per cent of their Gross Domestic Product (GDP) to promote research, development and innovation strategies in Africa.

ICTs and the internet are thus imperative for tertiary education. The most effective way to increase the knowledge of ICT in a population is through education. To underline this statement, the following goal was set up by the AAU, at the Conference on African Research and Education Network Infrastructure, held in Tunis, in November 2005 (AAU 2005: introduction). Pehrson and Ngwira (2006) stated that:

> no later than 2008, universities and research institutions in Southern Africa will have access to broadband services and the global Internet on the same level as peers in the developed parts of the world, with a quality of service in the gbps rather than kbps.

However, many Southern African universities still have infrastructural problems such as sufficient bandwidth to access the internet. Although the technology for interconnection of computer networks was developed for the American military network, important applications such as e-mail and HTTP (i.e. the WWW), emerged within higher education (Stanton and Stöver, 2005; SURFnet, 2002). As noted earlier, the internet and the WWW are in fact the largest knowledge databases in the world according to SURFnet (2002). South Africa (SA) is regarded as an advantaged country within Africa. In terms of GDP SA was rated 29th in the

International Monetary Fund (IMF) 2006 listings (International Monetary Fund 2007) which is two-and-a-half times larger than the next African country on the list (Nigeria at 48th). With this position on the African continent, one expects SA to be far ahead of its African counterparts in terms of ICT infrastructure. Indeed, when one compares ICT access in South Africa to that of the rest of sub-Saharan Africa (SSA), it is apparent that access to ICTs in South Africa is far more widespread than in other SSA countries (see Table 2 below). South Africa has more fixed lines, mobile subscribers and internet users (including broadband subscribers) than other countries in SSA (World Bank 2005).

Table 2: Comparison of South Africa's ICT infrastructure with other sub-Saharan African countries

ICT infrastructure	SA	SSA average	Botswana	Namibia	Mozambique	Zimbabwe
Population (million)	47	743	2	2	20	13
Percentage urban	59%	35%	57%	35%	35%	36%
Fixed lines	101	17	75	64	4	25
Mobile subscribers	724	125	2	44	62	54
Internet users	109	29	34	37	7	77
Personal Computers	85	14	45	109	6	92
Broadband subscribers	3.5	0	0.	0.	0.	8
Int. bandwidth (bits pp)	19	2	15	4	1	4
Cost Internet (USD pm)	63	45	21	48	32	24

*Figures are reflected as millions (Extracted from World Bank 2005)

However there are a number of issues with regard to South Africa's ICT infrastructure that have an impact on the higher education (HE) sector, namely:

- Proportion of internet users to PCs;
- Bandwidth;
- Demographic divides;
- Internet costs; and
- Cell phone subscriptions.

This demonstrates just how important on-campus access is in our tertiary institutions. Various studies have reported on computer access in Higher Education Institutions (HEIs) in South

Africa. A report commissioned by the World Bank on connectivity in African tertiary institutions provides some comparative information on the average number of users per networked computer by region (Steiner, Tirivanyi, Jensen and Gakio, 2004). This is not necessarily a student to computer ratio, as it includes students and staff.

However, it does give one an indication of the huge differences in levels of access. In South Africa, the HEI average is 11 users per computer, which is much better than the average for African tertiary institutions, at 55:1 (Steiner, Tirivanyi, Jensen and Gakio, 2004). Given that the Western Cape and Rhodes studies conducted by Czerniewicz and Brown (2006) both noted that almost all staff have a networked computer on their desks, this figure would probably have been far worse if only students were included in the analysis. In a study of HEIs in the Western Cape, the range in student-computer ratios across the institutions was between 6:1 and 12:1 (Czerniewicz and Brown 2006). This is comparable to a study conducted within the social science departments of eight institutions across South Africa by Soudien, Louw and Muller (2007). In this study, Information Technology managers were asked to provide information about the availability of computers for students. This included not only the student-computer ratio but also the percentage of these computers that were unrestricted or centralized. Student computer ratios ranged between 7:1 and 38:1. As mentioned earlier the internet is widely used in the field of education, and this has made distance learning possible, especially at the tertiary education level. In such cases students register online and complete and submit their course work online. Certain studies have demonstrated the internet has become a functional tool for most colleges and universities, which has greatly changed the way students interact with others and with information as they go about their studies. However, according to Hadebe (2010), most students require some literature searching skills in order to access information that will help them for their studies. On the other hand Lindsay and Mclaren (2000) found that the majority of students, while recognizing the frustration of the internet, have found it to be a valuable source of information for support of their studies. Therefore, the next section will briefly discuss general findings of the studies conducted on the use of the internet by students.

2.5 Studies conducted on the use of the internet

According to McBride (2002) various individuals and groups access the internet for different reasons; for example, doctors can share medical data and teachers can supply students with

resources. As noted earlier, these services include the WWW, e-mail, file transfer and social networking sites.

For this section of the study more than twelve related studies on the use of the internet in a tertiary (college, university and university of technology) environment were reviewed. These studies were conducted both internationally and locally. Such studies were conducted in Botswana, Greece, Egypt, Israel, Japan, Malaysia, Nigeria, South Africa, the United Kingdom (UK) and the US. The discussion starts with a review of studies conducted outside the continent followed by studies conducted on the African continent and those done in South Africa.

2.5.1 Related studies conducted outside Africa

Kitao (1999) conducted a study on tertiary students in Japan via a survey research method whereby all students registered for the English language were interviewed using a self-administered questionnaire. The study established that the internet had many resources that were useful for students of English, especially for students (in Japan) who did not have many chances to communicate in English. Kitao (1999) further stated that there were sites where students could learn about grammar and vocabulary through grammar and vocabulary games and quizzes. On other sites students could practice their major language skills which were reading, writing and speaking. Lastly, Kitao (1999) noted that the study revealed that among the internet resources were journals that documented the reading of students, and students could also publish their own writings using the sites.

In a study conducted through a survey by Selwyn, Marriott and Marriott (2000) at the University of Bristol, the results revealed that within the wider drive in higher education to promote students use of ICTs, it was assumed that the internet would be a key application. Selwyn, Marriott and Marriott (2000) argued that popular conceptions of a new generation of students at ease with online learning persists through official literature and the media. Therefore, from that basis the study took an empirical perspective on the use of the internet by students, via focus group interviews with 77 students at two UK universities. The study explored the factors underlying their use (and non-use) of the internet in their university studies. Four crucial themes were identified: (1) the ways in which students were introduced to using the internet, (2) operational problems encountered when using the internet as an

information resource, (3) treatment of information retrieved from the internet, (4) the social element of learning in online environments. These factors were examined in detail and discussed in relation to the future presentation and organization of students' internet use in university settings. The findings established that many of the students did not feel altogether at ease with using the internet as an educational tool. Searching for information on the internet was seen by many as something that they had little, or no, control over. However, many undergraduates saw the internet as relevant and of real use to their degree work, but others saw it as simply too unwieldy, unreliable and untrustworthy to be extensively used as an information resource.

In a study conducted by Kubey (2001) in the US, educators, parents, government and students recommended the use of the internet in college and universities based on a decision that the availability and use of the internet provided some students with improved grades. Nevertheless, it appeared that there were concerns that intensive usage of the internet had a negative impact on students' social interaction, participation in cultural activities and for others the internet contributed to a negative effect in their academic performance. Kubey (2001) explored some of the above concerns in the study conducted in certain colleges and universities in the US through a survey of 572 students. According to Kubey (2001) heavier recreational internet use was shown to correlate highly with impaired academic performance. Furthermore, the study revealed that self-reported internet dependency and impaired academic performance were both associated with a greater use of all applications, but particularly with a much greater use of synchronous communication applications such as chat rooms and Multi User Dungeons (MUDs) as opposed to synchronous applications such as e-mail and Usenet newsgroups. Kubey (2001) further found that loneliness, staying up late, tiredness, and missing classes were also intercorrelated with self-reports of internet use. Hong, Ridzuan and Kuek (2002) conducted a study at the University of Malaysia reporting on the success of a technology and internet-enriched learning environments in moulding attitudes among students using the internet for learning. Hong, Ridzuan and Kuek (2002) stated that the lecturers actively encouraged the use of IT especially the internet for teaching and learning processes. Therefore, students were provided with computer facilities and were required to complete two compulsory generic courses in IT. The results of the study indicated that the students had a positive attitude towards using the internet as a learning aid. The students also showed adequate basic knowledge of the internet and also viewed the environment as supportive in using the internet. The study revealed that students who

preferred the internet for learning and viewed the environment as supportive in the use of the internet were those with better basic internet skills. Therefore, according to Hong, Ridzuan and Kuek (2002) the university achieved its objectives of promoting the use of the internet for teaching and learning. Hong, Ridzuan and Kuek (2002) also found that students with better basic internet skills were more positively predisposed towards using the internet for learning.

Jones (2002) conducted a study on internet usage that showed that compared to the general populace, 78% of students at tertiary institutions go online just for fun. Students mostly use the internet to browse the Web, read e-mails, send instant messages, download files and use social networks. The study also revealed that 79% of the students agreed that internet usage has had a positive influence on their studies and academic progress. Jones' (2002) study showed that students were twice as likely to download music files as the general population; they were also three times as likely to have done this on any specific day. Jones (2002) further argued that college or university students have the greatest access and use of the internet compared to any other demographic group. Thus according to Jones (2002) the use of the internet by university students has grown gradually over the years and the internet is now used as a primary source of information especially in tertiary institutions. This was supported by the study conducted by Scherer (1997) in the US which reported that approximately 32% of internet users accessed the internet in colleges or universities and 28% of all users were full-time students. Scherer (1997) argued that although students would wait for 30 minutes to access a computer at a popular laboratory, there were approximately 23 microcomputer laboratories to allow thousands of students to access the internet on a particular campus.

An e-mail is a means of electronic communication between people, provided that those people have an e-mail address and have access to the internet. McBride (2002) argued that e-mail is one of the cheapest means one can use to keep contact with others for either personal or other reasons. However, this form of communication is not instant as one can read or send a message at one's own convenience. To illustrate, in an instant communication people can converse interchangeably. Some students use the internet to communicate with their lecturers. For example, Jones (2002) noted that most of the students reported that their relationship with their lecturers had been positively affected by e-mail and internet communication generally, whereas only 2% said that it had a negative impact on their relationship with lecturers. The study also found that only 19% of students said they communicate with their lecturers more

via e-mail than face-to-face. Furthermore, Jones (2002) argued that studies conducted by the Pew Internet and American Life Project showed that as users increased online they were more likely to communicate about serious topics using e-mail. Similar traits were shown by college and university students, where almost half of them agreed that e-mail was a tool that allowed them to communicate more freely with their lecturers. Jones (2002) stated that nine out of ten students reported that they had been contacted by lecturers via e-mail and most students said they used e-mail to communicate class announcements.

The internet is used in many different ways to supplement students' academic activities and provide alternatives to lectures when students are looking at ways to bring new approaches to educational experiences. Jones (2002) argued that two-thirds of the students reported that they had just subscribed to one or more academic-oriented mailing lists related to their studies. Jones (2002) further argued that the Web and e-mail are the staple of students' educational experience. Therefore, for many college and university students, use of e-mail has become a daily activity.

Krol (1994) defined file transfer as the processes of moving computer files from one computer to another using a file transfer protocol (FTP). According to Jones (2002), college and university students also engage in file sharing of all kinds. In Jones' (2002) study 44% of college internet users reported sharing files from their computers while 26% of the overall population of internet users had shared files. The results of Jones' (2002) study showed that sharing of files other than music was also greater among college internet users with 52% of them having downloaded files other than music, while 41% of the overall population of internet users reported doing so.

Jones (2002) also found that college and university internet users are heavier users of instant messaging and online chat than those in the overall online population. Furthermore, Jones (2002) argued that while about half of all internet users have sent instant messages, almost three quarters of college internet users have done so, and college internet users were twice as likely to use instant messaging on any day compared to the average internet users. Social network sites have the following applications:

- Personal profile – containing user's information;
- List of associates or contacts –containing names of the people connected to the user;
- Discussion boards – normally open to all users of that site;

- Comment wall – here user leaves messages or comments;
- Group information – containing information related to the group;
- Publish News post – publish information of events, and
- Upload photos and videos – users post photographs that can be viewed by others (Cutajar, 2004).

Other social networks include MySpace, Twitter, Student Village and the most popular and widely used networking site called FaceBook. According to Green (2006) FaceBook was developed in 2004 by Mike Zuckerberg during his studies as a student at Harvard University. These networks have created an online environment that allows users to communicate with other users. Dillner (2000) stated that in these networks each user has a nickname by which he or she is identified. Such networks can be dangerous since users sometimes chat with people they do not know and according to Cutajar (2004) in order to avoid possible problems of security, some universities (and mostly schools) do not allow access to open chat rooms. However, students still have access to these sites when they access the internet at home.

In a study conducted by Nachmias and Segev (2003) at the Tel-Aviv University via the survey method, results revealed that the use of the internet as an instructional tool in higher education was rapidly increasing. The purpose of the study was to evaluate how online content was utilized, identifying the individual differences of content usage among students and the amount of content presented in the Web-supported sites. The Web-supported various types of students' engagements and interactivity providing access to a vast repository of resources. The study found that the internet was used mainly for information sharing between students and teachers. Nachmias and Segev (2003) realized that there was a decrease of scaffold usage during tutorials over time, indicating an increase in knowledge and skills for students. This finding resulted from the basis that the presentation of educational content on the internet was highly valuable for students, especially those who enjoyed visual presentation of information, comments and supplements to material taught in lectures.

A study conducted by Papanis, Giavrimis and Papani (2010) at a Greek university examined issues related to the learning process, the learning environments developed by the new virtual reality and the relationship between learning and the internet, with a particular focus on the impact of the internet on informal learning processes. The survey mainly aimed at investigating university students' beliefs about the impact of the internet on the learning

process. The sample comprised 390 students from the various university's departments, and consisted of 160 (41%) males and 230 (59%) females. The majority of the students believed that the internet can significantly contribute to the learning process. More specifically, students stated that internet use can improve learners' academic performance, promote research skills and critical thinking, encourage independent or collaborative learning, enhance motivation, strengthen self-confidence and improve the teaching methods. Papanis, Giavrimis and Papani (2010) argued that the internet facilitates access to information that the educational system fails to provide, and offers knowledge, frequently more useful than that provided by the courses, and thus complements, "formal" learning. The next section will discuss studies conducted in Africa that relate to students' use of the internet.

2.5.2 Studies conducted in Africa

In relation to the studies conducted in Africa, one of the studies reviewed was that conducted by Ojedokun (2001) at the University of Botswana which focussed on internet access and usage by students. For the purpose of this study unpublished documentary sources of the Department of Information Technology (DIT) were examined and two corporations were interviewed to obtain relevant information. The study investigated the adequacy of provision of access to, and the usage (in terms of use and misuse) of the internet by students, as well as the problems these students faced in internet use. The study revealed that many students did not have access to the internet due to the fact that at the time of the study there were insufficient computers with internet facilities. Ojedokun (2001) found that the majority of the respondents in his study did not use the Web for academic matters but they used it for entertainment purposes. Ojedokun (2001) also revealed that due to the lack of effective searching skills, those who had access to the internet used it essentially to search and retrieve information on entertainment, sports and news from around the world.

Ojedokun's (2001) study found that the major use of the internet was for surfing the Web and e-mail. Ojedokun (2001) further stated that the report of the 1998 library survey of internet users at Seton Hall University, revealed that 40.2% of respondents used the Web on a daily basis, 38% weekly, and 10.3% on a monthly basis.

The study of internet access and usage by staff of the University of Botswana, conducted by Ojedokun (2003), reported that there was limited use of file transfer (via FTP) among

students. This perhaps suggested that the students were not skilled in the use of this facility and thus were unable to share datasets, jointly write proposals and research papers and engage scholars on a global basis in dialogue on research issues of interest to them. Ojedokun (2001) reported that students used file transfer less often and were unlikely to know how to use this service to share data, write proposals and research papers, and engage in academic issues. Furthermore, Ojedokun (2003) pointed out that file transfer with FTP, supplemented e-mail attachments by quickly and cheaply transferring very large files, such as high-resolution images and large databases. Ojedokun (2003) also pointed out that the internet and e-mail are invaluable tools to promote research. E-mail and FTP help researchers in widely dispersed geographic areas to pursue joint projects.

A related study was conducted by Jagboro (2003) at the University of Nigeria where she reported that the internet is considerd one of the most significant technological developments of the late 20th century. Jagboro (2003) stated that the objective of the study was to evaluate the utilization of the internet for academic research at the Obafemi Awolowo University, Iie-Ife, Nigeria. For the purpose of the study questionnaires were administered to postgraduate students doing art and science-based programmes. Nonetheless, despite the added benefits of the internet in conducting research, teaching and learning, a number of problems still plague internet connectivity and usage in the Nigerian University system. Jagboro's (2003) study concluded that the use of the internet for academic research would significantly improve through the provision of more access points at departmental and faculty levels.

A study conducted in Egypt by Abdulla (2007) investigated whether students perceived the internet as a cultural threat or a cultural opportunity for Arabs; whether Arabs could learn more about the world and spread their own culture and traditions, or whether it was a threat to their cultural heritage. One important question that the study addressed was how students used the internet. Abdulla (2007) stated that among other motives of internet use that emerged from the factor analysis were entertainment, personal utility and social interaction. The results showed that a majority of students did not view the internet as a threat but rather as a medium that could help Arabs learn more about the rest of the world. Abdulla (2007) found that in Egypt students who were proficient in English were more comfortable using the internet, although they mostly used it for leisure purposes.

A study conducted by Eden and Ofre (2010) at the University of Calabar in Nigeria, explored the patterns of and relationships between reading and the internet use activities of undergraduate students. A descriptive survey design and a random sampling technique were used to administer 200 copies of a designed questionnaire to the undergraduate students of the university who used the university library during April 2009. Of these, 133 usable copies were returned, for a response rate of about 65%. Results showed that the students appreciated the importance of reading for their academic achievement, and were also highly aware of the importance of the internet for the timely acquisition of new information and knowledge. Although 61.5% of the students preferred internet browsing to reading printed books, journals and newspapers, only 36.8% of them agreed that internet use encouraged laziness in reading. The study recommended adequate library and internet access facilities and programmes in Nigerian universities to promote balanced reading and internet use activities among undergraduates. The study also found that university librarians should also explore means of meeting students' rising demands for electronic resources, and provide effective publicity and current awareness of the variety of existing and new information resources and services available to students in the university libraries.

Eden and Ofre (2010) argued that students' learning in the digital age depends on both an adequate search for learning materials through internet use activities, and adequate reading and study of the materials. Nevertheless, a lack of balance between the amount of time and effort devoted by students to reading and internet use activities could negatively affect their learning achievement (Eden and Ofre, 2010).

2.5.3 Studies conducted in South Africa

In South Africa similar studies related to this study were conducted by Kader (2007) and Shezi (2005). Shezi (2005) did his research on students at the St. Joseph's Theological Institute in KwaZulu-Natal. The study looked at how students at the institution used the internet. The survey research method was used in the study and data was collected using a self-administered questionnaire. Shezi (2005) found that 70.8% of the participants indicated that they were not formally trained to use the internet which made using it difficult. Furthermore, some respondents indicated that a shortage of computers at the St. Joseph's Theological Institute was another limitation to their use of the internet. On the other hand, Kader (2007) did her research on university students on the Durban campus of the University

of KwaZulu-Natal. She focused her study more on the use of the internet during leisure time with the emphasis on non-academic use. The study was a qualitative study based on the experiences of a few students who were chosen to participate using snowball sampling. The data was produced using interviews and a mini survey. Kader (2007) found that some undergraduate students did use the internet occasionally for educational purposes, such as research or communication with lecturers. Her findings indicated that students used the internet mainly for leisure activities which included social networking, e-mail, network games and downloading music.

Social networking is a means of communication by which people communicate with family, friends and others in an online community (Goldsborough, 2001). Kader (2007) argued that social networks have been on the internet since 1998 with the first networking site being unveiled in 1997. One of the earliest social networking sites was the Internet Relay Chat (IRC) site which was created by Oikarinen in 1998 and was initially called multi-user talk (MUT) and was the most commonly used internet chat system worldwide according to Crocker (2000). It was used for one-to-one or many-to-many (open to all) communication. Goldsborough (2001) argued that a spin-off from IRC is instant messaging (IM) which is very popular among the younger generation since one can go online to check if any of one's contacts were available to begin chatting with.

However, at the University of KwaZulu-Natal, Pietermaritzburg campus as no studies have been conducted on the use of the internet by the Faculty of Humanities, Development and Social Science undergraduate third year students, the purpose of this study was to investigate this particular group The next section will discuss the frequency of internet use by students.

2.6 Frequency of internet use by students

This discussion includes findings that relate to the frequency of internet use by students from some of the studies discussed earlier. A study conducted by Holmes (1997) at the University of Texas revealed that 381 out of 531 students reported they used the internet at least once a week and they were classified as internet dependent. In this study users were classified into groups: pathological users who averaged 8.5 hours of internet use per week; persons with limited symptoms averaged 3.2 hours per week and those with no symptoms who averaged 2.4 hours per week. Furthermore, Holmes (1997) stated that with 19 hours of internet use per

week, many students reported signs of interference in functioning (failure to manage time, missing sleep and missing meals). However 80% of the sample reported the above signs and therefore they were then treated as normal not pathological. Therefore, overall, internet dependent students used the internet for a wider variety of reasons than other students (Scherer 1997).

In the study done by Scherer (1997) 75% of the students accessed the internet at least once a week, 13% reported that their use was excessive and significantly interfered with personal functioning. The study further revealed that the weekly internet users included a larger number of males compared to females. The majority of the weekly internet users perceived the internet as having a positive effect on their lives. Moreover, Scherer (1997) found that students reported, on average 4.2 hours per week online for personal or leisure activities, 2.7 hours for academic tasks and 1.2 hours for professional work. Therefore the total number of hours spent online was an average of 8.1 hours per week.

Chapman (2000) also found that although one third of the students did not receive internet training; students used the internet mainly for academic purposes. Female undergraduate students used the internet the most. However, a study conducted at Duke University by Lubans (1999) reported that the Web was used for academic purposes several times a week by a majority of respondents and males tended to use the Web more often than females. Moreover, Scherer (1997) argued that over 90% of weekly internet users accessed the internet for academic work and to maintain relationships with their family and friends. On the other hand, Davis (2002) stated that lecturers accepted students using the Web for research and felt positive about the internet being used as a research tool. Davis (2002) then concluded by stating that students also used the internet to submit their assignments.

The study done by Ojedokun (2001) found that a large number of students had been using the internet for less than six months. He further found that 60.1% of the students spent three hours or less per week using the internet while only 4.73% of students spent more than 10 hours per week. Bao (1998) found similar results where 78.5% of the students reported that they used the internet for their academic studies on a daily or weekly basis. The study further revealed that the respondents mostly used e-mail regularly followed by Web browsing and then news groups. Ojedokun (2003) argued that the reasons for regular use of e-mails might be because it is a cheaper way of communicating and allows the transfer of file attachment

images. Kubey (2001) argued that although internet use was on the increase, so were concerns for some students that excessive use of the internet might interfere with their academic achievements, conventional social interaction and exposure to desirable cultural experiences.

According to Jones (2002) almost all college students (95%) reported using e-mail for social communication at least once a week, and 21% reported that they used it at least once a day for similar purposes. Further findings revealed that students spent between one and three hours per week in social communication. Moreover, students reported that they either use the internet less than three hours a week (31%) or four to seven hours a week (38%). Jones (2002) argued that of those who reported spending less than three hours a week on the internet, 45% claimed they spent an hour of that time communicating socially only, while 41% claimed one or two hours. Of those who reported spending four to seven hours a week on the internet, 35% claimed they spent only an hour per week in social communication, while 40% spent one to two hours and the majority of college students, 62%, two to three hours communicating socially. Jones (2002) therefore concluded that at least 25% of college students spent as many as three hours or more a week online. Drawing on the results of this study, Jones (2002) further stated that one-fifth of today's college students begin using computers between the ages of five and eight. Furthermore, by the time they were sixteen to eighteen years old, all of today's current college students had begun using computers and the internet was a common place in the world in which they lived. Just under half (49%) of students first began using the internet in college while 47% began using it at home before going to college. College students are frequently looking for e-mail with 72% checking e-mail at least once a day. Jones (2002) found that 86% of the college students have gone online compared with 59% of the general population. College internet users were twice as likely to have downloaded music files when compared to all internet users: 60% of college internet users have done so compared to 28% of the general public.

In the study conducted by Shezi (2005) it appeared that 18 (52%) of the respondents reported they had been using the internet for over two years while 8.8% had used it for less than six months. Shezi (2005) argued that generally the respondents did not spend much time on the internet. Similar to Ojedokun's (2001) study, Shezi's (2005) study found that a large number of students spent three hours or less on the internet per week. However, the distinction of time spent on the internet for academic purposes and leisure purposes was not determined.

Having discussed the frequency of internet use by students, the following section will explore problems experienced by students when using the internet.

2.7 Problems experienced by students when using the internet

In the study conducted by Luambano and Nawe (2004) at the University of Dar es Salaam the findings reported that there were four identifiable problems of internet facilities on campus. These problems included:

- Very few computers with internet on campus;
- Internet connection was very slow;
- Very little time allocated for internet use; and
- Very little training given in the use of the internet facilities.

It appears that Shezi (2005) and Ojedokun (2001) identified the same issues in their respective studies. On the other hand, Kubey (2001) found that studies of general internet users suggested that some people may experience psychological problems: social isolation, depression, loneliness and time mismanagement related to their internet use. In addition, according to Scherer (1997) excessive internet use is problematic when it results in impaired functioning such as compromised grades or failure to fulfil responsibilities.

Anderson (2001) argued that the internet has been connected to other problems as well. For example, one study of college students has linked internet use to the rate of academic exclusion or dismissal. Furthermore, Anderson (2001) maintains that college students may be particularly susceptible to problems related to internet use and specifically to excessive internet use. Other risks of internet use include harassment, the exchange of pornography, online gambling, credit card debt as a result of excessive online purchasing and social isolation secondary to excessive amounts of time spent online. Anderson (2001) concludes that based on these facts, it can be concluded that college students could be susceptible to overusing or becoming dependent on the internet.

On the other hand a study conducted by Tadasad, Maheswarappa and Alur (2003) revealed that few undergraduate students of the P.D.A College of Engineering, Gulbarga, made use of the internet since the use of the internet was restricted to general or recreational purposes.

According to Luambano and Nawe (2004), Ojedokun (2001), Ojedokun (2003) and Shezi (2005) studies have revealed that certain students did not use the internet because of their limited skills and knowledge. Ojedokun (2003) reported that 22% of the respondents had the experience of between one and two years of internet use, while 73.6% had three or more years of internet use. Shezi (2005) found similar results with 8.8% of the students who reported that they had only had six months or less of internet use. Ojedokun (2003) also found that among the 22% of the students who had used the internet for one to two years, some did not had prior formal training on using the internet. Furthermore, Ojedokun (2003) found that of the 58.3% of students who used the internet very regularly, only 28% had received any training on internet use prior to the study.

Shezi (2005) and Luambano and Nawe (2004) also identified the problem of insufficient awareness of the resources available on the internet that could enhance learning. However, it appears that some lecturers put more emphasis on printed sources than on internet information sources. Luambano and Nawe (2004) therefore, pointed out that the lack of motivation by lecturers was seen as one of the reasons why students did not utilize this information resource.

An inadequacy of infrastructure in some institutions such as at St. Joseph's Theological Institute, was one of the reasons students did not use the internet (Shezi, 2005). On the other hand Kader's (2007) study revealed that institutional policies regulating access to social networks and other sites was also a cause of non-use of the internet by students.

A study conducted by Gaimster and Gray (2000) at US colleges found that whilst there were many advantages to the internet as a tool for independent research, there were also many barriers that prevented the students from using it effectively. These barriers included a lack of access to IT, a lack of knowledge about the internet and the subject domain, a lack of experience in information seeking strategies and a lack of confidence in using computers.

Ozcan and Buzlu's (2007) study was carried out to determine the general characteristics of internet use among university students in Turkey and to examine the relationship between internet use and the psychosocial conditions of the students. Among the 730 university students who participated, the average age was 20.84 (Standard Deviation (SD) 1.95), and the majority were females. The average internet use period of the students was detected as 2.80

(SD 1.33) years for females and 3.59 (SD 1.60) years for males. The average score of the Online Cognition Scale (OCS) used for determining problematic use was 84.64 (SD 33.50): for females, 77.99 (SD 30.70); for males, 92.16 (SD 34.96). According to Ozcan and Buzlu (2007) students of social sciences scored highest on the OCS. It was determined that as the OIS score increased, students' performance of internet activities such as general information searches and academic research decreased and that performance of interactive and entertainment internet activities such as chat, financial transactions, game playing, sex, downloading programs, and listening to MP3s increased. While a positive correlation was found between problematic use and loneliness and depression, a negative correlation was found between problematic use and perceived social support.

Ying-Fang and Peng (2008) conducted a study that examined the relationships between university students' internet use and students' academic performance, interpersonal relationships, psychosocial adjustment, and self-evaluation. The study was based on data drawn from a national survey of college students in Taiwan. A stratified sample of 49,609 students (2005–2006 academic year juniors) was randomly selected from 156 universities (174,277 students). Students completed a questionnaire online. Heavy internet users and non-heavy internet users differed significantly on a number of dimensions. Non-heavy users had better relationships with administrative staff, academic grades, and learning satisfaction than heavy internet users. Heavy users were more likely than non-heavy internet users to be depressed, physically ill, lonely and introverted.

2.8 Summary of the chapter

This chapter reviewed the related literature on the use of the internet by students. Studies conducted outside Africa, followed by studies done in Africa and then studies done in South Africa were reviewed. Having briefly discussed the general timeline of the internet, the chapter reviewed the introduction of the internet in higher learning institutions. This chapter also reviewed the frequency of the internet use by students and problems experienced by students when using the internet.

Chapter 3

Research methodology

3.1 Introduction

This chapter deals with the research methods adopted in the study. Research methodology is defined by Terre Blanche and Durrheim (1999) as the manner in which a researcher goes about studying what s/he believes can be learnt. The two broad categories under which research is conducted are referred to as qualitative and quantitative research. The former refers to studies that are statistical in nature while the latter is normally conducted within the sphere of social sciences and lends itself to a more descriptive format. According to Babbie and Mouton (2001) the methodology section of the study focuses on the processes of research and tools or techniques to be used. The main focus of this chapter is on the research design and methodology that was used to address the research problem. It also focuses on the population, different data collection instruments used, namely the self-administered questionnaire and interview, method of data analysis and the validity and reliability of the study. The current study adopted a combination of qualitative and quantitative methods.

3.2 Research design

As noted above, Leedy (1997: 104) argues that all research revolves around two major approaches, namely quantitative and qualitative. This study used the triangulation research design approach whereby both qualitative and quantitative research methods were used for gathering data (Bailey, 1987). According to Babbie and Mouton (2001: 217) methodological triangulation is the “best way to collect information about different events and relationships from different points of view”.

Quantitative research generally refers to an objective study that is statistically valid and is normally associated with numeric data. These methods were originally developed in the natural sciences to study natural phenomena (Myers, 1997). This type of epistemology aims at explaining and predicting what happens by looking for relationships between the elements involved (Falconer and Mackay, 1999). According to Kim (2003) the methodology is characterized by the use of empirical methods that will validate and not influence that which is being examined. Hence, this type of research is conducted under strict, stable experimental

conditions, as opposed to natural conditions, while the researcher remains totally neutral. This form of research is logical and involves objective analysis. Kader (2007) argued that more often than not, the quantitative technique is applied in the positivistic approach.
On the other hand, qualitative research is more subjective; it is more in-depth, exploratory, interpretive and open-ended in nature. Falconer and Mackay (1999) argued that in qualitative research, studies are conducted on entities in their natural settings as opposed to quantitative studies, which are conducted in controlled settings. Qualitative research methods were developed in the social sciences so that researchers could study social and cultural phenomena (Myers, 1997). The researcher is at the centre of the research, as he/she is involved in the collection of various empirical materials, which he/she interprets in different ways so that he/she can obtain a better understanding of the data at hand (Denzin and Lincoln, 2003).

3.2.1 Research method

According to Babbie and Mouton (2001: 83) there are three main research strategies: experiments, surveys and case studies. For this study the researcher used the survey research strategy. The survey research strategy was chosen because the objective of such a strategy was to describe, compare, contrast, classify, analyze and interpret the significances of the use of the internet by the Faculty of HDSS undergraduate third year students at the UKZNP campus. More importantly, surveys are the least expensive research format and have the quickest speed of data collection and reporting. As one of the widely used research methods the survey method gathers data at a particular point in time in order to describe the nature of existing conditions (University of KwaZulu-Natal, Faculty of Education, 2010). According to Babbie and Mouton (2001: 232) the survey research method is "probably the best method available to the social scientist interested in collecting data for describing a population too large to observe directly."

The purposes of the survey research method are clearly outlined by Thody (2006). According to Thody (2006: 99), surveys should demonstrate the following:

- Attraction – which gives readers a feel of what it was like to be the researcher;
- Applicability – which indicates how far the methodology is generalizable;
- Credibility – which shows that other researchers have used similar methods or that the researcher has built on other researchers' methods;

- Limitations – which humbly admit to a few difficulties but don't undermine the research by overwhelming self-criticism;
- Reliability – which demonstrates whether the researcher has not invented or mispresented the data, or been careless in their recording or analysis;
- Replicability – which includes enough details to enable other researchers to check the research findings by repeating the method; and
- Validity – which shows the foundation in truth through the justification in other literature and similar research projects.

According to Powell (1991) the purpose of the survey is to describe the characteristics of the population studied, estimate the proportion in the population, make specific predictions and test relationships. Powell (1991: 56) observes that this method is used to gather contemporary data but does not allow a researcher to manipulate the independent variables. Hence it is considered to be less rigorous. Furthermore, Powell (1991:57) observes that even though a descriptive survey seems to be less rigorous than experimental research it can be "strong in testing relationships among variables." This method is the most frequently used research design in the social sciences (Babbie, 1992: 230). Surveys enable the analysis of large data sets using computer analysis software (SPSS). Moreover, Busha and Harter (1980) also observed that the survey makes it possible to collect data on the opinions, knowledge, attitudes and values of the respondents. This means that the researcher of the present study was able to gather data on the knowledge, attitudes and opinions of the third year undergraduates in the Faculty of HDSS on the UKZNP campus.

3.2.2 Advantages of the survey research method

The advantage of the survey research method is its flexibility and broadness of scope. This makes it possible to be applied to many populations and it can focus on a wide range of topics. The information obtained can be used for many purposes. Surveys gather data on a once-off basis, representing a wide target population and are therefore economical. According to Busha and Harter (1980) survey research is capable of collecting background information and hard-to-find data, and the researcher usually does not have the opportunity to influence or motivate the respondents' responses. Furthermore, Busha and Harter (1980: 79) argued that good surveys can be more costly, but considering the amount of information obtained in the course of normal surveys, they are not uneconomical. Robson (1993) also

concurred that the survey research method provides a relatively simple and straight forward approach to the study of attitudes, values and motives of respondents.

3.2.3 Disadvantages of the survey research method

The survey research method has some limitations. It provides less control of the research environment and it is sometimes considered incapable of establishing causal relationships; in addition it is also considered to be less rigorous than experimental research (Powell, 199l: 53). Furthermore, survey research is also demanding in terms of personnel, time and other resources. The researcher was able to overcome some of these limitations by using the self-administered questionnaire method and also by establishing a rapport with the respondents especially with the Director of the Information and Communication Technology Division (ICTD) at UKZNP.

3.3 Population

According to Busha and Harter (1980), population can mean any set of persons or objects that have common characteristics, for example, third year Social Science students at UKZNP. Population depends on the size of the group or objects about which the researcher plans to make inferences, meaning that the population can be a large group or a small group. A population can refer to people, institutions or objects that have at least one characteristic in common. If the targeted population consists of a large number of units, then sampling needs to be done since the researcher cannot survey the entire population. In the present study the population to be surveyed encompasses undergraduate Faculty of HDSS third year students at the UKZNP campus and the Director of ICTD. Given the population size of 330 undergraduate third year students registered with the Faculty of HDSS, sampling was not done and the entire population was surveyed.

3.4 Data collection instruments

Chinyemba (2003) maintains that once the researcher has identified the information that is required to answer the research question, the next step is to design or adopt an appropriate instrument with which to collect information. Ngulube (2003: 204) argues that it is in a quantitative approach to instrumentation, that data and findings are controllable, predictable, consistent and replicable. Therefore, in order to get consistent answers to consistent questions, questionnaires should be designed to collect the data for the survey. Constructing

an appropriate and accurate instrument for measuring and collecting data is absolutely necessary. The technique for data collection in the present study was the self-administered questionnaire which was distributed during lecture times to third year classes and was collected immediately after respondents had completed the questionnaire. Babbie and Mouton (2001: 259) noted that self-administered questionnaires seem to have fewer limitations, for instance they have a higher completion rate when compared to the other techniques, such as the mail questionnaire. To collect data from the Director of ICTD a semi-structured interview was used. The data from the interview was used to support the data from the questionnaire.

3.4.1 Self-administered questionnaire

The questionnaire has been defined by Powell (1985) as a set of questions for submission to a number of persons to gather data and they are, as noted above, commonly used in social science data collection. Moyane (2007: 36) quoted Ngulube (2003) articulating that the term 'questionnaire' refers to "technique of data collection in which each respondent is asked to give answers to the same set of questions and statements in predetermined order, in the absence of the researcher". As noted earlier, Bless and Higson-Smith (1995: 111) state that the questionnaire is the primary data collection tool used by social science researchers to cover both small and large populations within a short time with minimum cost. It is a very flexible method which allows both open-ended and closed questions to be used, and it also enables the researcher to collect enough information from the respondents (Swisher and McClure 1984: 80). In this study the self-administered questionnaire (see Appendix 1) was considered the most suitable instrument for data collection due to the nature of the data required to answer the research questions. The items on the self-administered questionnaire were influenced by two studies similar to the current study which were conducted by Shezi (2005) and Kader (2007). Both these studies adopted the survey method and used a self-administered questionnaire to gather data.

3.4.1.1 Advantages of a self-administered questionnaire

There are numerous advantages of using a self-administered questionnaire. The following were important considerations for the study.

- Collecting data through a self-administered questionnaire is more efficient in that it requires less time, it is less expensive, and permits collection of data from a large sample (Powell, 1985).
- The self-administered questionnaire eliminates interview bias, in that it provides a fixed format of questionnaires, which eliminates variation in the questioning process. Once the questions have been written in their final version and included in their questionnaire, content and originality will not change (Powell, 1985).
- The questionnaire can facilitate collection of a large amount of data in a relatively short-period of time (Powell, 1997).
- The self-administered questionnaire tends to encourage frank answers due to possible anonymity, since the respondents can complete the form without being in the presence of the researcher (Powell, 1985). Self-administered questionnaires, if they have to be returned later without mentioning the respondent's name, assures anonymity which in return encourages the respondents to be honest in their answers (Bless and Higson-Smith, 1995: 112).
- Questionnaires can be constructed so that data are relatively easy to analyse (Powell, 1997).
- Questionnaires provide respondents time to think before answering the questions asked (Powell, 1985).

3.4.1.2 Disadvantages of a self-administered questionnaire

There are also negative implications for using the questionnaire as a data collecting tool which the researcher needs to address. These negative implications included the following:

- The self-administered questionnaire requires the level of literacy and familiarity with the language used. In sending out questionnaires, it is not easy to discover in advance whether or not respondents have the minimum level of literacy (Bless and Higson-Smith, 1995). However, this was not a problem in the study as the population consisted of third year university students who were familiar with the language used in the questionnaire.
- Contrary to interview protocols in which ambiguities can always be clarified, it is impossible to enlighten or clarify in the case of self-administered questionnaires, since they are sent or mailed rather than administered directly as in an interview (Gay, 1981: 166).

- In a self-administered questionnaire, respondents may not understand the questions asked or may give answers that they think the researcher wants to hear. In addition, if the respondents are not interested in the topic the response rate tends to be low (Hadebe, 2010).

3.4.2 The interview schedule

According to De Vos, *et al*. (2002) semi-structured interviews contain elements of both structured and unstructured interviews. In structured interviews there is strict adherence to the wording and the order of questions while unstructured interviews consist of open questions (discussed in more detail in 3.4.3.1) which may be presented in any order (Kader, 2007). The degree to which the interview is structured is dependent on, among others, the topic and the type of information required (Sarantakos, 2005). Semi-structured interviewing begins with more general questions or topics; these questions then become the basis for more specific questions which may or may not be prepared in advance (Sarantakos 2005). Semi-structured interviewing is guided only in the sense that part of the interview is directed by the prepared schedule. Cohen, Manion and Morrison (2002) argued that the schedule increases the richness of the data and makes data production fairly systematic for each participant.

De Vos, *et al.,* (2002) argued that the limitations to this form of data production, is that participants may be shy about revealing certain information and may therefore hold back. This could however be overcome by making participants feel comfortable in the knowledge that they are not being judged and that anonymity is offered (De Vos *et al.,* 2002). The interview schedule was five pages long and consisted of 30 questions (see Appendix 2). The aim of the interview was to establish the context of internet usage by students generally, with regards to budget, infrastructure, licensing and copyright agreements, staff and policies regulating access to the internet on campus. Most of the questions required the Director of ICTD to answer “Yes” or “No” and then provide an explanation for his response.

3.4.3 Format of questions

In a questionnaire, questions can be categorized as either open or closed. According to De Vos (1998) for a study of this nature both open and closed questions are recommended.

3.4.3.1 Open questions

De Vos (1998) maintains that an open question gives the respondents an opportunity to express themselves. The open question has advantages when a variable is relatively unknown to the researcher who will be able to explore the variable better and obtain some idea of the spectrum of responses. The disadvantage of open questions is the difficulty in analysis. It is sometimes difficult to interpret the content. De Vos (1998) found that a questionnaire could contain both open and closed questions. Therefore, in such a case the researcher must aim at using as many closed questions as possible, even though there will always be information which is difficult to generate by closed questions, so that open questions are unavoidable. However, open questions are time consuming because the respondents could take time expressing themselves when answering questions.

3.4.3.2 Closed questions

Babbie and Mouton (2001) argued that closed questions ask the respondents to select an answer from among a list provided by the researcher. Babbie and Mouton (2001) also pointed out that closed questions are very popular because they provide a greater uniformity of responses and are more easily processed. Such questions limit the respondents' potential answers. Nevertheless, closed questions are limited, because they do not allow respondents to express themselves as much as they would like. The researcher's structuring of the responses may overlook some responses, for example, leaving out certain issues that respondents would have mentioned as important (Babbie and Mouton, 2001). According to De Vos (1998) using only closed questions can leave out important information, as these questions can never completely provide for the variety of response options which may exist on any particular subject. De Vos (1998) also stated that the ideal is a section of the questionnaire consisting of closed questions which are suitable for statistical processing by computer on the one hand and open questions which have to be processed manually, on the other hand. Thus the students' questionnaire consisted of both open and closed questions in the current study.

3.5 Pre-testing and distribution of the instrument

It is very important to design the questionnaire properly to ensure that the respondents understand what a researcher is asking them. The researchers need to be sure that the questions asked do not have multiple meanings. According to Powell (1991) pre-testing enables the researcher to identify items from the questionnaire that might not be understood

by the respondents. The process of pre-testing assists the researcher to see whether there are ambiguous or missing questions. Powell (1997: 105) stressed that the questionnaire needs to be pre-tested or evaluated to improve the standard of questioning, before they are used in a survey. This process can permit a preliminary testing of the hypothesis, point out a variety of problems not anticipated relating to design and methodology, facilitate a practice run of the statistical procedures to be used, and perhaps even indicate that the final study may not produce any meaningful results and therefore should be rethought or abandoned.

The pre-testing for the current study was done on ten undergraduate students from the Faculty of Law at the University of KwaZulu-Natal. The reason for using this group of students in the pre-test was because they were at the same level and had similar characteristics with undergraduates from the Faculty of HDSS. Minor editorial and grammatical changes were made to the questionnaire from the comments received from the pre-test population. Once the pre-testing had been completed and adjustments made on the basis of the recommendations of the pre-test population, the questionnaire copies were immediately distributed to students during their lecture times. Students were required to return the questionnaire immediately after completion on the same day. An appointment was made with the Director of ICTD to conduct the interview at a suitable time. The Director gladly agreed to participate in the interview. The interview was conducted in the Director's office and the Director agreed to the interview being recorded.

3.6 Data analysis

After the data collection was completed, it was sorted and coded, preparing it for analysis. According to Birley and Moreland (1998: 58) "coding is the process of structuring data into an analyzable format". Collected data needs to be presented in a way that makes it understandable to the researcher and other readers. Bairley and Moreland (1998) argued that coding of quantitative data uses either letters, numerals, or alpha-numeric codes to describe the data, which becomes capable of being analyzed without reference to each of the responses of the sample.

Before preparing the data to be coded for analysis, the questionnaires were checked to ascertain whether respondents completed it or not. The errors were checked to ensure that the researcher had received accurate data. A coding key was prepared which involved assigning

numerals to the answers of question items. This facilitated the inputting of responses into a limited numbered category. An SPSS matrix was designed by defining variables using the categories created during data coding. Thereafter, the data was captured, questionnaire-by-questionnaire, variable-by-variable, into the SPSS matrix to facilitate further analysis. The data was then analysed using SPSS. Descriptive statistics in the form of frequency and percentage distributions were used to reveal patterns and thus facilitate interpretation and the presentation of findings. The purpose of data analysis was to check for ambiguity, completeness, comprehensibility, relevancy and reliability. Babbie and Mouton (2001:411) pointed out that it is recommended that completed questionnaires are given unique numbers; this facilitates the checking of errors. The data from the interview was transmitted from the recording and was thematically analyzed.

3.7 Validity and reliability

The importance of validity and reliability is stressed by Birley and Moreland (1998:40). The researcher needs to be sure that the methodology adopted and data collecting instruments are both valid and reliable. Babbie and Mouton (2001: 119) noted that:

> reliability is the degree to which a test consistently measures what it is set out to measure while at the same time yielding the same results, whereas validity is the degree to which a measure does what it is intended to accomplish.

3.7.1 Validity

According to Babbie (1992: 132) the term “validity” refers to the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration. Birley and Moreland (1998: 41) argued that validity ensures that data sets collected or items used are pertinent or relevant to the research. Bless and Higson-Smith (1995: 82) stated that in order to achieve high internal validity a research design should control as many extraneous variables as possible, and should deal with problems such as history, maturation, regression to the mean, test effects, instrumentation effects, experimental mortality and selection bias. Birley and Moreland (1998) argued that in validity the concern should be to reduce the amount of interference by non-relevant or non-valid aspects, such as the language used. The language should thus not be complex or hinder understanding and answering.

External validity examines the extent to which the results of a study can be generalized to the wider population. According to Pratt (1992: 80) pre-testing of questions and surveys or the use of pilot studies may save a great deal of time by validating the questions themselves to check whether they are relevant or useful or give the required information. In this study a pre-test of the questionnaire on undergraduate Faculty of Law students at the UKZNP was used as a tool for content validation.

3.7.2 Reliability

Reliability is the extent to which a test would give consistent results if applied more than once to the same people under standard conditions (Birley and Moreland, 1998). Similarly, Newell (1993) argued that reliability is a matter of whether a particular technique, applied repeatedly to the same object would yield the same results each time. Moreover, Newell (1993: 106-107) declared that reliability is concerned with the consistency of a measure. One of the approaches that can be used to check reliability is the 'test-retest method', which involves using an instrument with a group on two separate occasions and analyzing how closely the two sets of results match each other. An instrument, which produces different scores every time it is used to measure an unchanging value, has low reliability. Nonetheless, an instrument which always produces the same results when used to measure an unchanging value can be trusted to give an accurate measurement and is said to have high reliability. In the current study in order to enhance reliability, the researcher recorded every step that was taken during data collection in such detail that if other researchers wanted to replicate the study, they would come to the same conclusions.

3.8 Summary of the chapter

This chapter described the methodology used in the study by explaining what was done in the study in order to collect data to answer the research questions. The researcher opted to employ a triangulation approach, using both qualitative and quantitative research methods to gather data. The choice of instrument used was dictated by the nature of the problem under study, which required collection of factual information to describe the use of the internet by the Faculty of HDSS undergraduate third year students at UKZNP. The instruments used were the self-administered questionnaire and scheduled interview. To ensure validity and reliability of the study, a pre-test of the questionnaire was done. The data was analyzed using SPSS.

Chapter 4

Results of the study

4.1 Introduction

One of the main reasons for choosing to conduct this study on third year students was that which sets them apart from first and second year undergraduates, namely, their familiarity with the internet. This chapter presents the results of the study. The study set out to investigate the use of the internet by third year students in the Faculty of HDSS at UKZNP. Data was collected using a self-administered questionnaire for the Faculty of HDSS third year students and an interview schedule for the Director of ICTD at UKZNP. The results for each question in the questionnaire and interview schedule are presented. The questionnaire data was analyzed using SPSS version 15, while data collected from the interview was thematically analyzed.

4.2 Response rate

As proposed in the research methodology chapter, the self-administered questionnaire was distributed to third year students in the Faculty of HDSS. Out of 330 questionnaires distributed only 254 were collected immediately after completion by students, which yielded a response rate of 77%. Saunders, Lewis and Thornhill (2000: 158) argued that response rates in surveys can be as low as 40% and that a response rate of approximately 30% is reasonable. In contrast, Babbie and Mouton (2001: 261) argued that a response rate of 50% is fairly good, while that of 60% and 70% is very good. Therefore, in the present study a very good response rate of 77% was yielded providing the researcher with the opportunity to make generalizations about the total population.

4.3 Questionnaire results

The questionnaire was divided into five parts. Part A sought background information on the students involved in the study; Part B dealt with access to the internet; Part C focused on the use of internet services or facilities by third year students; Part D focused on students' ability to use the internet and the problems experienced by students when using the internet, and lastly, Part E dealt with students' comments and suggestions.

Note:

- Percentages and figures were rounded off to one decimal place.
- Questions 9, 11, 12, 15, 18, 21, 22, 23 and 29 were multiple response questions allowing respondents to indicate more than one response and hence the percentages exceed 100%.
- N reflects number of respondents that completed a particular question.

4.3.1 Part A: Background information

Background information included the Schools under which respondents were registered, their majors, type of registration, gender, age and citizenship.

4.3.1.1 School enrolled under

Question 1was asked to determine what School the respondents were registered under. Table 3 illustrates that 254 students were registered under nine different Schools from the Faculty of HDSS. These were: School of Anthropology, Gender and Historical Studies; Philosophy and Ethics; Politics; Psychology; Sociology and Social Studies; Language, Literature and Linguistics; Literary Studies, Media and Creative Arts and School of Religion and Theology. Table 3 shows that out of 254 students 55 (21.7%), were with the School of Sociology and Social Studies; 53 (20.9%) with the School of Literary Studies, Media and Creative Arts; 47 (18.5%) were with the School of Psychology and 45 (17.7%) with the School of Politics. Less than ten students were enrolled with the following Schools: School of Religion and Theology (3.1%), School of IsiZulu (2.7%) and School of Anthropology, Gender and Historical Studies (1.6%).

Table 3: Schools

N=254

School registered under	Frequency	Percent
Sociology and Social Studies	55	21.7%
Literary Studies, Media and Creative Arts	53	20.9%
Psychology	47	18.5%
Politics	45	17.7%
Language, Literature and Linguistics	23	9.1%
Philosophy and Ethics	12	4.7%
Religion and Theology	8	3.1%
IsiZulu	7	2.7%
Anthropology, Gender and Historical Studies	4	1.6%
Total	254	100%

4.3.1.2 Majors

Question 2 asked the respondents to state their majors. It should be noted that some students had majors from different Schools. For example, some respondents indicated Psychology and Politics as their majors. In addition, some students selected majors from Schools outside the Faculty of HDSS. As shown in Table 4 the top seven selected majors by the Faculty of HDSS undergraduate third year students were: Psychology (59 or 23.2%), English (56 or 22.1%), Sociology (55 or 21.7%), Political science (46 or 17.7%), Legal studies (35 or 13.8%), Media and communication studies (34 or 13.4%) and Drama studies (33 or 13%).

Table 4: Majors

N=254

Major	Frequency	Percent
Psychology	59	23.2%
English	56	22.1%
Sociology	55	21.7%
Political science	45	17.7%
Legal studies	35	13.8%
Media and communication studies	34	13.4%
Drama	33	13%
Human resources management	22	8.7%
Environmental science	18	7.1%
Philosophy	16	6.3%
Geography	15	5.9%
Zulu	12	4.7%
Rural resource management	12	4.7%
Community resources management	11	4.3%
Ethics	8	3.1%
Theological studies	8	3.1%
French	8	3.1%
Marketing	7	2.8%
Historical studies	4	1.6%
Afrikaans	2	0.8%

*** multiple responses**

4.3.1.3 Registration type

Question 3 required respondents to indicate if they were full-time or part-time students. Table 5 illustrates that out of 254 respondents, 253 (99.6%) were full-time students while only one (0.4%) was a part-time student.

Table 5: Registration type

N=254

Registration type	Frequency	Percent
Full-time	253	99.6%
Part-time	1	0.4%
Total	254	100%

4.3.1.4 Gender of the respondents

In question 4 respondents were asked to indicate their gender. Table 6 shows that out of 254 students 52% (132) were female while the remaining 48% (122) were male. Therefore, more than half of the third year students in the Faculty of HDSS in PMB were female.

Table 6: Gender

N=254

Gender	Frequency	Percent
Female	132	52%
Male	122	48%
Total	254	100%

4.3.1.5 Age of respondents

In question 5 respondents were requested to indicate their age. Table 7 shows that out of 254 students 50 (19.7%) students were aged 21. Table 7 indicates that most of the third year students in the Faculty of HDSS (64.1%) were between the ages of 20 and 25 years old.

Table 7: Age

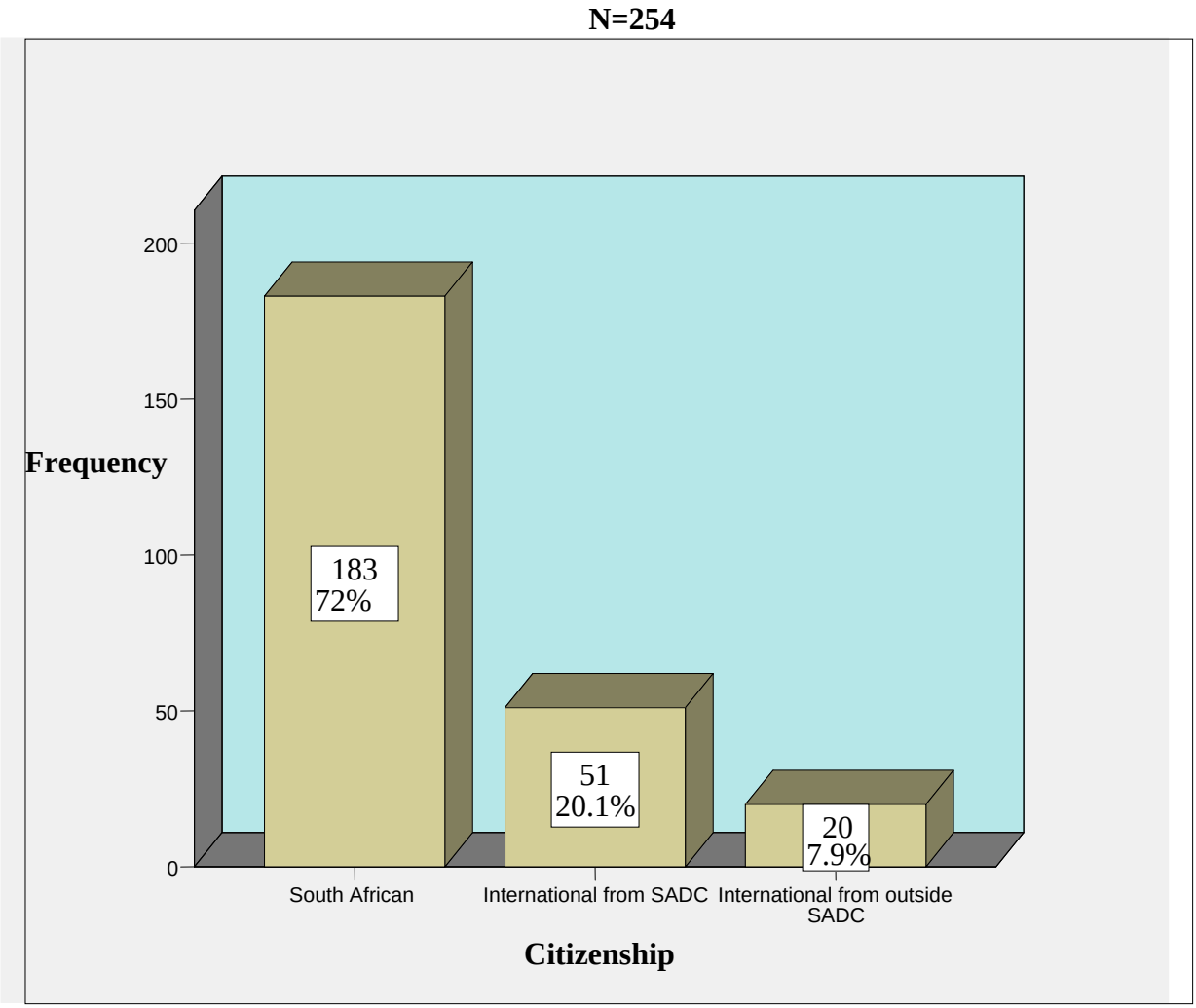
N=254

Age	Frequency	Percent
21	50	19.7%
22	44	17.3%
23	42	16.5%
24	27	10.6%
20	22	8.7%
25	22	8.7%
26	21	8.3%
27	9	3.5%
19	6	2.4%
29	3	1.2%
28	2	0.8%
31	2	0.8%
34	2	0.8%
32	1	0.4%
35	1	0.4%
Total	254	100%

4.3.1.6 Citizenship

Question 6 was asked to establish the country of origin of respondents. Here respondents were required to indicate whether they were South African citizens, non-South Africans from the SADC region or non-South African from outside the SADC region. Figure 2 indicates that out of 254 respondents, a majority of the third year students, 183 (72%), indicated that they were South African, while 51 (20.1%) indicated that they were international students from the SADC region and 20 (7.9%) indicated that they were international students from outside the SADC region.

Figure 2: Citizenship



4.3.2 Part B: Access to the internet

This section deals with the Faculty of HDSS undergraduate third year students' access to the internet.

4.3.2.1 Access to internet on campus

Question 7 was asked to establish whether students used the internet on campus or not. Table 8 clearly illustrates that out of 254 students, a majority of 252 (99.2%) indicated that they used the internet on campus while two (0.8%) said they did not use the internet on campus. These two (0.8%) students who said they did not use the internet on campus explained in

question 8 that they had computers with internet access at home and it was easier to work from home than on campus since the LANs were always fully occupied.

Table 8: Use of the internet on campus

N=254

On campus use	Frequency	Percent
Yes	252	99.2%
No	2	0.8%
Total	254	100%

4.3.2.2 Place where internet accessed on campus

Question 9, a multiple response question, asked students where on campus they accessed the internet from. Here students were allowed to tick more than one option that applied to them. For this question out of 254 (100%), 252 (99.2%) responded to the question, two of those who did not respond did not use the internet on campus as reflected in Table 8. Table 9 indicates that 248 (98.4%) students reported to have accessed the internet from computer laboratories (LANs), while 124 (49.2%) students reported to have accessed it from the library and 30 (11.9%) students reported to have accessed the internet from residences through wireless hubs or connections.

Table 9: Place where internet accessed on campus

N=252

Places where internet accessed on campus	Frequency	Percent
LAN	248	98.4%
Library	124	49.2%
Residence (Wireless hub)	30	11.9%
Total	402	159.5%

4.3.2.3 Access to internet off campus

Question 10 was asked to establish whether students accessed the internet from off campus. Table 10 indicates that out of 254 students a majority of 157 (61.8%) students reported that

they did not access the internet off campus while only 97 (38.2%) reported to have accessed the internet off campus.

Table 10: Access to internet off campus

N=254

Off campus access	Frequency	Percent
No	157	61.8%
Yes	97	38.2%
Total	254	100%

4.3.2.4 Internet services used off campus

Question 11, a multiple response question, asked the students (97) who reported to have accessed the internet from off campus to indicate which internet services they used. Table 11 illustrates that a majority of 83 (85.6%) students indicated that they used e-mail from off campus, while 73 (75.3%) reported to have used social networks, 60 (61.9%) students used the Web, 33 (34%) students reported to have used Telnet off campus.

Table 11: Internet services used off campus

N=97

Internet services used off campus	Frequency	Percent
E-mail	83	85.6%
Social networks	73	75.3%
Web	60	61.9%
Telnet	33	34%
Total	249	256%

4.3.2.5 Reasons for not accessing the internet off campus

Question 12, a multiple response question, was asked of those who said they did not access the internet off campus to identify some of the reasons why they did not access the internet from off campus. Table 12 clearly illustrates that out of 157 students, 117 (74.4%) students indicated they did not have access to the internet off campus while 116 (73.9%) students

reported that access to the internet off campus was costly and 107 (68.2%) reported that they did not have access to a computer off campus.

Table 12: Reasons for not accessing the internet off campus

N=157

Reasons for not accessing the internet off campus	Frequency	Percent
Do not have access to the internet off campus	117	74.4%
Access to the internet off campus is costly	116	73.9%
Do not have access to a computer off campus	107	68.2%
Total	340	216.6%

4.3.3 Part C: Use of the internet services or facilities

This part dealt with issues related to the use of internet services or facilities, the importance of those services to students and the frequency of their use.

4.3.3.1 Length of internet use

Question 13 was asked to establish the length of internet use by the respondents. Table 13 indicates that out of 254 students, a majority of 232 (91.3%), reported to have used the internet for over 24 months, 14 (5.5%) students had used the internet for 19 to 24 months, four (1.5%) for seven to twelve months, three (1%) for 13 to 18 months and only two students (0.7%) had used it for less than six months.

Table 13: Length of internet use

N=254

Length of internet use	Frequency	Percent
Over 24 months	232	91.3%
19 to 24 months	14	5.5%
7 to 12 months	4	1.5%
13 to 18 months	3	1%
Less than 6 months	2	0.7%
Total	254	100%

4.3.3.2 Hours spent on the internet

Question 14 was asked to establish how many hours per week third year students spent on the internet. Table 14 indicates that out of 254 students only 83 (32.7%) reported that they had spent seven to nine hours on the internet per week, 60 (23.6%) spent four to six hours while 39 (15.4%) spent one to three hours per week. Furthermore, Table 14 indicated that 38 (15%) reported that they had spent over 12 hours on the internet per week while 20 (7.9%) spent less than one hour per week and 14 (5.5%) spent 10 to 12 hours per week on the internet.

Table 14: Hours spent on internet per week

N=254

Hours spent on internet per week	Frequency	Percent
7 to 9 hours	83	32.7%
4 to 6 hours	60	23.6%
1 to 3 hours	39	15.4%
over 12 hours	38	150%
Less than 1 hour	20	7.9%
10 to 12 hours	14	5.5%
Total	254	100%

4.3.3.3 Internet services used on campus

Question 15, a multiple response question, was asked to establish what internet services the students used on campus. Table 15 indicates that all 252 students reported to have used the internet services available on campus. Table 15 indicates that a majority of 250 (99.2%) students had used e-mail on campus while 235 (93.3%) had used the Web. Table 15 further indicates that 168 (66.7%) students had used social networks and 147 (58.3%) students had used telnet on campus. Thus the most used internet services on campus by third year students were e-mail and the Web.

Table 15: Internet services used on campus

N= 252

Internet services used on campus	Frequency	Percent
E-mail	250	99.2%
Web	235	93.3%
Social networks	168	66.7%
Telnet	147	58.3%
Total	800	317.5%

Table 16: Cross tabulation of age and services used on campus

N=254

Age	E-mail		Web		Telnet		Social networks	
	N	Percent	N	Percent	N	Percent	N	Percent
21	50	19.7%	45	17.7%	29	11.4%	36	14.2%
22	44	17.3%	44	17.3%	28	11%	35	13.8%
23	42	16.5%	41	16.1%	24	9.4%	31	12%
24	25	9.8%	26	10.2%	17	6.7%	12	4.7%
25	21	8.3%	20	7.9%	15	5.9%	12	4.7%
26	20	7.9%	18	7.1%	14	5.5%	13	5.1%
20	22	8.8%	17	6.7%	9	3.5%	16	6.3%
27	9	3.5%	8	3.1%	4	1.6%	4	1.6%
19	6	2.4%	5	2%	2	1.2%	4	1.6%
29	3	1.2%	3	1.2%	2	1.2%	2	0.8%
28	2	0.8%	2	0.8%	1	0.4%	1	0.4%
31	2	0.8%	2	0.8%	1	0.4%	0	0%
34	2	0.8%	2	0.8%	0	0%	1	0.4%
32	1	0.4%	1	0.4%	0	0%	1	0.4%
35	1	0.4%	1	0.4%	1	0.7%	0	0%

Table 16 above cross-tabulated age and internet services used by students on campus. The aim of Table 16 was to identify the relationship between internet services used by students and their age. Students between the ages of 21 to 25 years used the internet services more

than those who were between the ages of 26 to 35 years. Furthermore, students between the ages of 21 to 24 years used the e-mail and the Web, telnet and social networks more than those between the ages of 25 to 35 years. Therefore, students of the age of 21 year old used internet services the most compared to all the other ages.

4.3.3.4 Internet services in order of importance to students

Question 16 was asked to establish which internet services were most important to students whether they accessed them on or off campus. Table 17 indicates that a majority of 190 (74.8%) students ranked e-mail as essential, while only four (1.6%) ranked it as somewhat important. A further majority of 179 (70.5%) students ranked the Web as essential while only one (0.4%) student ranked it as somewhat important. In contrast to e-mail and the Web only 45 (17.7%) students ranked telnet as essential, 89 (34.7%) students ranked telnet as very important and only nine (3.6%) students indicated that telnet was not important. News readers were essential for 23 (9.1%) students, very important for only 51 (20.1%) students and important for a further 89 (35%) students. Furthermore, Table 17 indicated that social networks were essential for only 24 (9.4%) students while 35 (13.8%) students regarded social networks as very important and 61 (24%) reported social networks as not important. FTP was essential for only 16 (6.3%) of the students, while 92 (36.2%) students indicated that FTP was not important for them. All 254 (100%) of the students reported that Usenet was not important for them.

Table 17: Importance of internet services

N=254

Internet services	Essential	Very important	Important	Somewhat important	Not important	No response
E-mail	190 (74.8%)	47 (18.5%)	13 (5.1%)	4 (1.6%)	0 (0%)	0 (0%)
Web	179 (70.5%)	54 (21.3%)	19 (7.5%)	1 (0.4%)	0 (0%)	1 (0.4%)
Telnet	45 (17.7%)	87 (34.3%)	73 (28.7%)	37 (14.6%)	9 (3.5%)	3 (1.2%)
News readers	23 (9.1%)	51 (20.1%)	89 (35%)	69 (27.2%)	15 (5.9%)	7 (2.8%)
Social networks	24 (9.4%)	35 (13.8%)	51 (20.1%)	80 (31.5%)	61 (24%)	3 (1.2%)
FTP	16 (6.3%)	19 (7.5%)	40 (15.7%)	74 (29.1%)	92 (36.2%)	13 (5.1%)
Usenet	0 (0%)	0 (0%)	0 (0%)	0 (0%)	254 (100%)	0 (0%)

4.3.3.5 Internet services frequency of use

Question 17 sought to establish how often students used the internet services. Table 18 indicated that 113 (44.5%) students used e-mail daily while 98 (38.6%) students used the Web daily. Less than half, 104 (40.9%) of the students had used the Web two to four times a week and 90 (35.4%) students used e-mail two to four times a week. Only 71 (28%) of the students used telnet once a month while 56 (22%) had used a news a reader once a month. Furthermore, 57 (22.4%) of the students had used telnet every two weeks and 51 (20.1%) students used a news reader every two weeks. FTP was used just once a month by only 80 (31.5%) students. All (100%) students had never used Usenet while 52 (20.5%) never used FTP and 46 (18.3%) had never used social networks.

Table 18: Frequency of use of internet services

N=254

Internet services	Daily	2 to 4 times a week	Once a week	Every 2 weeks	Once a month	Never	No response
E-mail	113 (44.5%)	90 (35.4%)	38 (15%)	8 (3.1%)	3 (1.2%)	0 (0%)	2 (0.8%)
Web	98 (38.6%)	104 (40.9%)	40 (15.7%)	11 (4.3%)	0 (0%)	0 (0%)	1 (0.4%)
Telnet	20 (7.9%)	56 (22%)	71 (28%)	57 (22.4%)	34 (13.4%)	11 (4.3%)	5 (2%)
News reader	26 (10.2%)	48 (18.9%)	56 (22%)	51 (20.1%)	44 (17.3%)	21 (8.3%)	8 (3.1%)
Social network	70 (27.8%)	46 (18.3%)	33 (13.1%)	33 (13.1%)	24 (9.5%)	46 (18.3%)	2 (0.4%)
FTP	11 (4.3%)	20 (7.9%)	33 (13%)	49 (19.3%)	80 (31.5%)	52 (20.5%)	9 (3.5%)
Usenet	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	254 (100%)	0 (0%)

*** multiple responses**

4.3.3.6 E-mail services used

Question 18, a multiple response question, was asked to establish which of the e-mail services students used regardless of whether they used it on or off campus. Table 19 reveals that out of 254 (100%) students, a majority of 253 (99.6%) reported to have used e-mail while one (0.4%) did not indicate if they used e-mail or not. Table 19 also indicates that a majority of 250 (98.4%) students used GroupWise while 136 (53.5) used Yahoo mail and 83 (17.7%) used Gmail.

Table 19: E-mail services used

N=254

E-mail services used	Frequency	Percent
GroupWise	250	98.4%
Yahoo Mail	136	53.5%
Gmail	83	32.7%
No response	1	0.4%
Total	469	184.6%

4.3.3.7 Importance of e-mail use

Question 19 sought to establish how the 253 students who used e-mail rated the importance of e-mail whether they were on or off campus. Table 20 indicates that 161 (63.6%) students reported that using e-mail to communicate with lecturers was essential while 73 (28.9%) regarded e-mail use for communication with lecturers as very important. For 48 (19%) students communicating with students in and outside South Africa using e-mail was essential and very important for 101 (39.9%) students. Communicating with friends in and outside South Africa via e-mail was essential for 78 (30.8%) students, very important for 60 (23.7%) and only 19 (7.5%) students regarded such communication as not important.

Table 20: Importance of e-mail use

N=253

Importance of e-mail use	Essential	Very important	Important	Somewhat important	Not important
Communicating with lecturers at UKZNP	161 (63.6%)	73 (28.9%)	14 (5.5%)	3 (1.2%)	2 (0.8%)
Communicating with students in and outside SA	48 (19%)	101 (39.9%)	69 (27.3%)	22 (8.7%)	13 (5.1%)
Communicating with friends in and outside SA	78 (30.8%)	60 (23.7%)	47 (18.6%)	49 (19.4%)	19 (7.5%)

4.3.3.8 Importance of Web use

Question 20 sought to establish the importance of Web use by the students whether they were on or off campus. Table 21 indicates that 159 (62.6%) students regarded accessing academic material and e-databases on the Web as essential and for 131 (51.6%) using search engines was essential. For 75 (29.5%) of the students entertainment and sports on the Web was important while 93 (36.6%) of students regarded news as important to them. Just browsing the Web with no particular site or subject in mind was regarded by 68 (26.8%) students as somewhat important while sports and entertainment was somewhat important for 54 (21.3%) students and 51 (20.1%) regarded news as somewhat important to them. For only 68 (26.9%) students just browsing the Web with no particular site or subject in mind was not important.

Table 21: Importance of Web use

N=254

Importance of Web use	Essential	Very important	Important	Somewhat important	Not important	No response
Accessing academic material and e-databases	159 (62.6%)	76 (29.9%)	14 (5.5%)	4 (1.6%)	0 (0%)	1 (0.4%)
Using search engines	131 (51.6%)	77 (30.3%)	40 (15.7%)	5 (2%)	0 (0%)	1 (0.4%)
Entertainment and sport	37 (14.6%)	69 (27.2%)	75 (29.5%)	54 (21.3%)	17 (6.7%)	2 (0.8%)
News	40 (15.7%)	58 (22.8%)	93 (36.6%)	51 (20.1%)	9 (3.5%)	3 (1.2%)
Just browsing with no particular site or subject in mind	13 (5.1%)	48 (18.9%)	56 (22.1%)	68 (26.8%)	68 (26.8%)	1 (0.4%)

4.3.3.9 Search engines used

Question 21, a multiple response question, sought to establish which of the search engines students used whether they were on or off campus. Table 22 indicates that a majority of 238 (93.7%) used Google while 100 (39.4%) used Yahoo, 82 (32.3%) used Being, 31 (12.2%)

used Ask and only three (1.2%) students used the AltaVista search engine. Thus, Google and Yahoo were the most popular search engines used.

Table 22: Search engines used

N=254

Search engines	Frequency	Percent
Google	238	93.7%
Yahoo	100	39.4%
Being	82	32.3%
Ask	31	12.2%
AltaVista	3	1.2%
Total	454	178.8%

4.3.3.10 Favourite search engine

Question 22, a multiple response question, sought to establish which of the search engines was favoured by students. Table 23 indicates that 235 (92.5%) regarded Google as their favourite search engine while 39 (15.4%) preferred Yahoo. Of the 254 students 17 (6.7%) students did not have a favourite search engine while five (2%) students favoured Ask and only three (1.2%) regarded Being as their favourite search engine. It is clear that Google was the most favoured search engine by third year students.

Table 23: Favourite search engine

N=254

Favourite search engine	Frequency	Percent
Google	235	92.5%
Yahoo	39	15.4%
Don't have a favourite search engine	17	6.7%
Ask	5	2%
Being	3	1.2%
Total	299	117.8%

4.3.3.11 Social networks used

Question 23, a multiple response question, was asked to establish which social networking sites students used whether they were on or off campus. Table 24 summarizes by indicating that out of 254 (100%) students only 204 (80.3%) responded to the question and the other 50 (19.7%) did not respond. Table 24 indicated that a majority of 198 (78%) students used FaceBook while 68 (26.8%) students used Twitter, 54 (21.3%) used Student Village and only 34 (13.4%) used MySpace.

Table 24: Social networks used

N=254

Social networks	Frequency	Percent
FaceBook	198	78%
Twitter	68	26.8%
Student Village	54	21.3%
MySpace	34	13.4%
No response	50	19.7%
Total	354	159.2%

4.3.4 Part D: Students' ability and problems

This section sought to identify the students' ability to use the internet and the problems they encountered when using the internet.

4.3.4.1 Students' ability to use e-mail

Question 24 sought to establish the students' ability to use e-mail. More than half of students 164 (64.8%), rated their ability to use e-mail as very good followed by 90 (35.6%) students who rated their ability to use e-mail as good. None of the students indicated that their ability to use e-mail was poor.

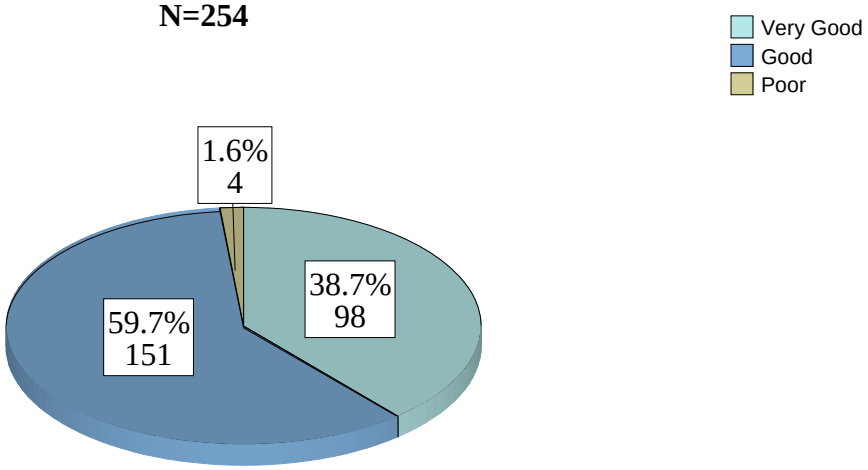
4.3.4.2 Students' ability to use the Web

Question 26 was asked to establish the students' ability to use the Web. Figure 3 indicates that only 98 (38.7%) students reported their ability to use the Web as very good while more than half of the students 151 (59.7%), reported their ability to use the Web was good and only

four (1.6%) reported their ability to use the Web as poor. It should be noted that one (0.4%) student did not respond to the question.

Figure 3: Ability to use the Web

N=254

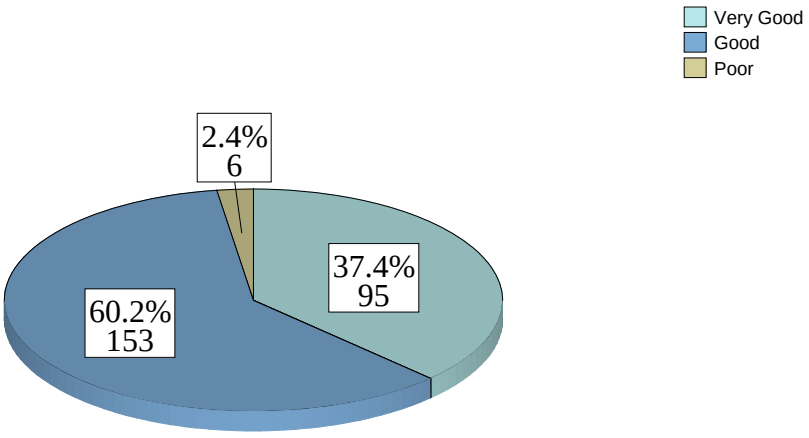


4.3.4.3 Students' ability to use search engines

Question 27 was asked to establish the students' ability to use search engines on campus. Figure 4 clearly illustrates that more than half of the students, 153 (60.2%), rated their ability to use search engines as good compared to 95 (37.4%) who rated their ability with search engines as very good whereas only six (2.4%) rated their ability to use search engines as poor.

Figure 4: Ability to use search engines

N=254



4.3.4.4 Constraints or problems encountered by students when using internet facilities

Question 29, a multiple response question, sought to establish some of the problems students encountered when using internet facilities. Table 25 indicates that a majority of 184 (72.4%) students indicated slow internet connection as a problem they had encountered, while more than half the students, 165 (65%), regarded restricted sites (for example social networks) as one of the problems they had encountered. More than half the students, 154 (60.6%), reported that a limited number of computers with internet access available on campus was a problem while 141 (55.5%) students pointed out that little training in the use of internet facilities was offered on campus.

Table 25: Problems encountered

N=254

Problems encountered using internet	Frequency	Percent
Very slow internet connection	184	72.4%
Restricted access to certain networks	165	65%
Very few computers with internet	154	60.6%
Very little training in the use of internet facilities is offered	141	55.5%
Total	644	253.5%

4.3.4.5 Comments and recommended suggestions

The last question of the questionnaire asked students to state any additional comments and recommend suggestions regarding internet use. It must be noted that not all students made comments and suggestions. However, 89 (35%) students suggested that wireless hubs should be made available in all residences and surrounding campus areas. In addition 63 (24.8%) students identified social networks as conflicting with academic work and suggested that their access should be restricted during office hours in order to accommodate academic related activities. Also, 56 (22%) students identified additional computers in the LANs as one of the solutions to the internet access related problems while 35 (13.8%) of the students requested more training on internet facilities.

4.3.5 Summary of questionnaire results

The questionnaire results demonstrated that most of the students used the internet on campus. Most respondents used GroupWise e-mail and the Google search engine. Some students accessed the internet from off campus primarily for accessing their e-mails and social networks. Most students were of the view that access to the internet from off campus was costly and considered that using e-mail to communicate with lecturers and using the Web to access academic related material together with electronic databases as essential. The most popular social networks used were FaceBook and Twitter. A majority of students rated their ability to use e-mail as very good and their ability to use the Web and search engines as good as well. In addition, limited access to computers, slow internet connections and restricted sites were pointed out as the major problems students encountered when using the internet on campus. Lastly, students' recommendations included the addition of more computers in the LANs, restricting access to social networks during office hours and the installation of wireless connections in residences around the campus.

4.4 Interview results

The Director of ICTD was interviewed using a semi-structured interview schedule. The interview schedule was divided into five parts. Part A dealt with the budget; Part B dealt with infrastructure; Part C addressed the issue of staffing; Part D dealt with licensing and copyright agreements, and Part E dealt with usage of the internet by students.

4.4.1 Part A: Budget and access

Part A consisted of thirteen questions. The Director was asked questions relating to the budget allocation for the internet facilities at UKZN and how the budget was split amongst campuses and what policies guided students' internet access. When asked about the budget allocation for the internet, the Director responded by pointing out that the UKZN usually spends R9 million on the internet. However, for the year roughly R1.6 or R1.7 billion had been spent on internet access annually. The Director clarified that the budget was not split across campuses but the university (all campuses) uses one fiber optic cable which was based at the Howard College campus and the other campuses access the internet from there. When asked about the guidelines on how to use the internet, the Director responded by pointing out that general facilities' guidelines in the LANs instructed students not to abuse the internet to avoid being restricted or having their bandwidth reduced. In relation to regulating or

restricting some websites, the Director explained that the Student Representative Council (SRC) recently submitted a list of students' grievances which requested the restriction of social networks during office hours. Therefore, regulation and restriction of websites depends on the university stakeholders (students and staff).

4.4.2 Part B: Infrastructure

This part of the interview schedule covered issues related to infrastructural challenges such as the availability of computers, internet access and bandwidth. The Director admitted that there was a problem regarding the availability of computers. He pointed out that at UKZN there were over 5000 computers and due to the limited number of computers some departments only provided access for academic purposes. Furthermore, the ratio of students to computers was eight students per computer but ICTD was working hard to reduce the ratio to six students per computer. When asked if there was enough bandwidth the Director confidently replied that the bandwidth was sufficient. To illustrate, the Director assured the researcher that the university has 200 megabytes per second (mbps) of which only 160 mbps is used and the University also had an option of increasing access to 800 mbps.

4.4.3 Part C: Staffing

This part of the interview schedule asked questions about technical support staffing at the UKZNP. The aim of this section of the study was to discover if there were sufficient support staff responsible for internet facilities.

One of the questions asked if there were sufficient staff to assist with any challenges related to internet connectivity and access. The response from the Director was that there was no dedicated staff for internet problems encountered by users but almost all LANs had staff (LAN administrators) responsible for general computing challenges in LANs and there were also help desk centers on all the campuses. Furthermore, the Director pointed out that they had sufficient staffing to assist students with any challenges related to internet access.

4.4.4 Part D: Licensing and copyright agreements

This part of the interview schedule sought to investigate what the nature of copyrights and licensing agreements the University had in terms of internet services. Responding to the question the Director pointed out that the University policy was to abide by copyright rules.

However, the Director noted that it was left to staff and students to abide honestly by the general copyright rules. In relation to restricting access to social networks the Director said there were no restrictions to any sites but it depended on what the university community requested, therefore as a result some sites could only be accessed after 17:00 on weekdays. Such sites include social networking sites such as FaceBook.

4.4.5 Part E: Students' usage of the internet

The last part of the interview schedule was on the use of internet facilities by students. The Director was asked what services students used the most and he replied that it was difficult to identify which internet services were mostly used by students. However, the Director estimated without giving solid figures that e-mail, the Web and social networks were mostly used by students. Lastly, the researcher asked the Director if he considered that students had enough skills to use the internet. In response the Director was of the view that students had basic competency skills necessary to use the internet.

4.4.6 Summary of the interview results

The results of the interview with the Director indicated that a sufficient budget was allocated to internet facilities. However, a major challenge was the availability of computers. The Director indicated that there was sufficient bandwidth and adequate staff were available to assist users with problems they encountered when using the LANs. The Director was also of the view that students had basic competency skills necessary to use the internet.

4.5 Summary of the chapter

Chapter 4 presented the results of the study, which set out to investigate the use of the internet by undergraduate third year students of the Faculty of HDSS at the UKZNP. The results of the study have sufficiently answered the key research questions of the study. Questionnaire results presented background information of the respondents and their use of internet facilities. Recommendations discussed included the addition of computers in LANs and installation of wireless connections in residences. The results of the interview schedule which presented the Director's view regarding the budget allocated to internet facilities, infrastructure, staffing, licensing and copyright agreements and usage were also discussed.

Chapter 5

Discussion of the results

5.1 Introduction

In this chapter, the researcher discusses the findings of the study which surveyed undergraduate third year students of the Faculty of HDSS and the Director of ICTD. As noted earlier, the investigation was based on a review of the related literature of similar studies and the collection of data using a survey questionnaire (see Appendix 1) and an interview schedule (see Appendix 2). The research problem and research questions of the study are answered by a discussion of the results compared with similar studies reviewed in the literature (Chapter 2). The discussion of the results is also guided by important concepts discussed in the introductory chapter (Chapter 1). The purpose of the study was to investigate the use of the internet by undergraduate third year students of the Faculty of HDSS at the University of KwaZulu-Natal, Pietermaritzburg campus.

The aim of the study was to answer the following research questions:

- How often do students use the internet?
- What do students use the internet for?
- What internet services do students use the most and why?
- What information services are relevant and important for students?
- Do students have the necessary skills to use the internet?
- What problems do students experience when using the internet?

In this study a very good response rate of 77% was yielded allowing the researcher to make generalizations about the total population.

5.2 Demographic data of respondents

This section describes the profile of the students with regard to their demographic attributes which were: gender, age, citizenship of students, students' registration type, school enrolled with/in and majors.

5.2.1. Population demographics

More than half of the third year students in the Faculty of HDSS in PMB were female, 132 (52%) and 122 (48%) were male. Most of the third year students in the Faculty of HDSS (64.1%) were between the ages of 20 and 25 years old (see Table 7 in Chapter 4). Since most of the students were from a younger generation (between the ages 21 to 25 years) they used the internet services more than those who were older and between the ages of 26 to 35 years. A majority of the third year students, 183 (72%), were South African, while 51 (20.1%) were international students from the SADC region and 20 (7.9%) were international students from outside the SADC region. Almost all, of 253 (99.6%) of the third year students were full-time while only one (0.4%) was a part-time student. A majority of these students 55 (21.7%) were registered with the School of Sociology and Social Studies, 53 (20.9%) with the School of Literary Studies, Media and Creative Arts, 47 (18.5%) were with the School of Psychology and 45 (17.7%) with the School of Politics. The third year students were registered for the following majors: Psychology (59 or 23.2%), English (56 or 22.1%), Sociology (55 or 21.7%), Political science (46 or 17.7), Legal studies (35 or 13.8%), Media and communication studies (34 or 13.4%) and Drama studies (33 or 13%). Interestingly, Legal studies is not a major in the Faculty of HDSS but was popular amongst the third year students.

Having reviewed the demographic data of the students the discussion will follow the order of the research questions of the study in an attempt to answer the questions.

5.3. How often do students use the internet?

The findings of the present study revealed that undergraduate third year students of the Faculty of HDSS used the internet on and off campus. The results indicated that out of 254 students a majority of 157 (61.8%) students reported that they did not access the internet off campus while only 97 (38.2%) accessed the internet off campus. The results of the current study reported that out of 157 students (who indicated not using internet off campus) 117 (74.4%) students indicated that they did not have access to the internet off campus while 116 (73.9%) students reported that access to the internet off campus was costly and 107 (68.2%) reported that they did not have access to computers off campus. The results of the current study further indicated that a majority of 248 (98.4%) students reported that they accessed the

internet from LANs, while 124 (49.2%) accessed it from the library and only 30 (11.9%) students accessed the internet from residences through wireless hubs or connections.

Of the 254 undergraduate third year students registered with the Faculty of HDSS it appeared that more than half, 157 (61.8%) students, accessed the internet on campus while only 97 (38.2%) accessed it on and off campus. The current study shows that out of 254 students, of 232 (91.3%) reported that they used the internet for over 24 months, 14 (5.5%) students had used the internet for 19 to 24 months, four (1.5%) had used it for seven to twelve months, three (1%) used it for 13 to 18 months and only two students (0.7%) used it for less than six months. Contrary to this result were the results of the study done by Ojedokun (2001) where it was found that a large number of students had been using the internet for less than six months. Therefore, based on the results of the current study a majority of the third year students from the Faculty of HDSS were familiar with the internet.

Most of the third year students had been using the internet for more than two years. A study conducted by Holmes (1997) at the University of Texas revealed that 381 (71.8%) out of 531 students reported they used the internet at least once a week and they were classified as internet dependent. In Holmes' (1997) study users were classified into groups. In contrast to the Holmes (1997) study the current study students indicated their frequency of use of the internet by providing frequencies of each internet facility. Thus the findings of the current study (as seen in Table 18, Chapter 4) indicated that 113 (44.5%) students used e-mail daily while 98 (38.6%) students used the Web daily. Similarly, Jones (2002) found that college students frequently looked at e-mail with 72% checking e-mails at least once a day. The current study further pointed out that less than half, 104 (40.9%), of the students had used the Web two to four times a week and 90 (35.4%) students used the e-mail two to four times a week. As seen in Table 14 (see Section 4.3.3.2, Chapter 4) out of 254 students 83 (32.7%) reported they spent seven to nine hours on the internet per week, 60 (23.6%) spent four to six hours while 39 (15.4%) had spent one to three hours per week. Similarly, a study conducted at Duke University by Lubans (1999) reported that the Web was used for academic learning purposes several times a week by a majority of respondents and males tended to use the Web more often than females. Furthermore, similar results came from Ojedokun's (2001) study which found that 60.1% of the students spent three hours or less per week using the internet while only 4.73% of students spent more than 10 hours per week. Bao (1998) found similar results where 78.5% of the students reported that they used the internet for their academic

studies on a daily or weekly basis. The results of the current study revealed that the respondents used e-mail most regularly followed by Web browsing and then news readers.

The findings of the current study also showed that only 71 (28%) of the students had used telnet once a month while 56 (22%) had used news readers once a month. Furthermore, 57 (22.4%) of the students used telnet every two weeks and 51 (20.1%) students used a news reader every two weeks. Thus, in terms of frequency of use of internet facilities, telnet and news readers were not that frequently used by the third year students when compared with e-mail and the Web.

Shezi (2005) argued that generally the students in his study did not spend much time on the internet. Similar to Ojedokun's (2001) study, Shezi's (2005) study found that a large number of students spent three or less hours on the internet per week. Contrary to these findings, the current study concluded that generally third year students from the Faculty of HDSS spent much more time on the internet, spending seven to nine hours per week on these facilities.

5.4. What do students use the internet for?

From the current study it emerged that students mainly used the internet for:

- Web and search engines (93.3%);
- E-mail (99.2%);
- Social networking (66.7%);
- Telnet (58.3%); and
- File transfer (6.3%).

These results are similar to a study by Jones (2002) which reported that students mostly used the internet to browse the Web, read e-mails, send instant messages, download files and use social networks. Jones' (2002) study also revealed that 79% of the students agreed that internet usage had a positive influence on their studies and academic progress. However, in the current study students did not specify the influence of the internet on their studies but one would conclude based on the high ranking and frequency of use that the internet had a great impact on the third year students' educational experience.

5.4.1 Web

The results of the current study show that a majority of 235 (93.3%) of the students had used the Web on campus while 60 (61.9%) students used the Web off campus. It appeared that the

third year students used the Web to access academic related materials and electronic databases; used search engines; searched for entertainment and sports information, read news and others just browsed with no particular site in mind. The results of the study indicated that more than half, 59 (62.6%) students, regarded accessing academic materials and e-databases on the Web as essential and for 131 (51.6%) using search engines was essential. Furthermore, the findings of the study show that for only 75 (29.5%) of the students, entertainment and sports on the Web was important while 93 (36.6%) of students regarded news as important to them. Similarly, Papanis, Giavrimis and Papani (2010) argued that the internet facilitates access to information that the educational system may fail to provide, and offers students knowledge, frequently more useful than that provided by courses, and thus complements "formal" learning. Ojedokun (2001) also revealed that due to the lack of effective searching skills, those who had access to the internet used it essentially to search and retrieve information on entertainment, sports and news from around the world. On the other hand, this study found that only 68 (26.9%) students regarded just browsing the Web with no particular site or subject in mind as not important. In contrast to the current results, Jones (2002) conducted a study on internet usage that showed that compared to the general populace, 78% of students at tertiary institutions go online just for fun. Contrary to the current study's findings, Ojedokun (2001) found that the majority of the respondents in his study did not use the Web for academic matters but for entertainment purposes. In the present study most third year students used the internet facilities for academic purposes rather than for recreational purposes.

In terms of search engines used the current study showed that a majority of 238 (93.7%) used Google while 100 (39.4%) used Yahoo, 82 (32.3%) used Being, 31 (12.2%) used Ask and only three (1.2%) students used the AltaVista search engine. Furthermore, these findings indicated that 235 (92.5%) regarded Google as their favourite search engine while 39 (15.4%) preferred Yahoo. Of the 254 students only seven (6.7%) students did not have a favourite search engine while five (2%) students favoured Ask and only three (1.2%) regarded Being as their favourite search engine. It is clear that Google was the most favoured search engine by third year students in the Faculty of HDSS on the PMB campus. In contrast to these results were Ojedokun's (2001) and Shezi's (2005) studies where it was found that most of the students reported Yahoo as their favourite search engine in the respective studies.

5.4.2 E-mail

The results of the current study indicated that a majority of 250 (99.2%) students had used e-mail on campus while 83 (85.6%) used it off campus as well. In this study it appeared that students mainly used e-mail for communication with lecturers at UKZNP, communicating with students in and outside SA and communicating with friends in and outside SA. The findings of the study indicated that for more than half the students,161 (63.6%) using e-mail to communicate with lecturers was essential while for 48 (19%) students, communicating with students in and outside SA using e-mail was essential and 78 (30.8%) students regarded communicating with friends in and outside SA via e-mail as essential. These results are similar to Jones' (2002) study which reported that some students use the internet to communicate with their lecturers. For example, Jones (2002) noted that most of the students reported that their relationship with their lecturers had been positively affected by e-mail and internet communication generally, whereas only 2% said that it had a negative impact on their relationship with lecturers. Jones' (2002) study also found that only 19% of students said they communicated with their lecturers more via e-mail than face-to-face.

Furthermore, Jones (2002) argued that studies conducted by the Pew Internet and American Life Project showed that as users increased online they were more likely to communicate about serious topics using e-mail. Similar traits were shown by college and university students where almost half of them agreed e-mail was a tool that allowed them to communicate more freely with their lecturers. Jones (2002) argued that two-thirds of the students reported that they had just subscribed to one or more academic-oriented mailing list related to their studies. Thus in the current study one would argue that e-mail was used mostly by the third year students for academic purposes rather than for recreational. In addition, the study found that a majority of 250 (98.4%) students used GroupWise while 136 (53.5%) used Yahoo mail and 83 (17.7%) used Gmail.

5.4.3 Social networks

In terms of social networks, the current study indicated that third year students from the Faculty of HDSS used social networking, since 204 (80.3%) out 254 students responded as having done so. Jones (2002) also found that college and university internet users were heavier users of instant messaging and online chat than those in the overall online population. Furthermore, Jones (2002) argued that while about half of all internet users had sent instant

messages, almost three quarters of college internet users have done so, and college internet users were twice as likely to use instant messaging on any day compared to the average internet users. Social networks that the third year students used included Twitter, Student Village and the most popular and widely used networking site, FaceBook. In the current study results (see Table 24 in Chapter 4) indicated that a majority of 198 (78%) students had used FaceBook while 68 (26.8%) students used Twitter, 54 (21.3%) used Student Village and only 34 (13.4%) used MySpace. These results are similar to the study done by Kader (2007) which found that 80% of the respondents had accessed FaceBook and 10% did not use social networks. Similarly 19% of the third year students in the current study did not use social networks. Students mainly accessed these social networks in order to keep in contact with friends and as suggested by Philips (2007), also used the social networks as a means to find new friends and establish social relationships.

5.4.4 Telnet

In the current study not many students used telnet, as shown in Table 17 (Section 4.3.3.4, Chapter 4) since only 89 (34.7%) students ranked telnet as very important. No related studies shared similar or different results to this study in relation to the use of telnet by students. Thus one would conclude that telnet is not a popular internet facility used by the third year Faculty of HDSS students.

5.4.5 File transfer

According to Jones (2002) college and university students also engage in file sharing of all kinds.The current study indicated that there was not much use of FTP since only 16 (6.3%) of the students regarded FTP as essential while 92 (36.2%) students indicated that FTP was not important for them. These results are in keeping with Ojedokun's (2003) study which reported that students used file transfer less often and this possibly suggested that students did not have the necessary skills to make use of the service. Therefore, students were unlikely to know how to use the service to share data, write proposals and research papers, and engage in academic issues. Furthermore, Ojedokun (2003) pointed out that file transfer with FTP, supplemented e-mail attachments by quickly and cheaply transferring very large files, such as high-resolution images and large databases. These results are different from Jones' (2002) study where 44% of college internet users reported sharing files from their computers while 26% of the overall population of internet users had shared files. The results of Jones' (2002)

study showed that sharing of files other than music was also greater among college internet users with 52% of them having downloaded files other than music, while 41% of the overall population of internet users reported doing so. Thus, like telnet, sharing data files using FTP was not a popular internet facility used by third year students in the Faculty of HDSS.

5.5 What internet services do students use the most and why?

The findings of the current study revealed that the Faculty of HDSS undergraduate third year students used the following internet services or facilities: e-mail, Web, social networks, telnet and FTP. The results of the study indicated that out of these services the Web, e-mail, social networks and telnet were the most used internet services by the undergraduate third year students from the Faculty of HDSS. The findings of the study reported that 113 (44.5%) students used e-mail daily while 98 (38.6%) students used the Web daily. On the other hand 70 (27.8%) of the students used social networks daily while 26 (10.2%) used news readers daily and 20 (7.9) students had used telnet daily. Furthermore, telnet was used by 56 (22%) of the students two to four times a week while 48 (18.9%) students used a news reader two to four times a week and 46 (18.3%) students used social networks two to four times a week. As mentioned earlier, less than half, 104 (40.9%), of the students had used the Web two to four times a week and 90 (35.4%) students used the e-mail two to four times a week. During the interview, the ICTD Director estimated, without giving solid figures, that e-mail, the Web and social networks were mostly used by students. The Director's opinion was thus in keeping with the students' questionnaire results. Similar results were found in Ojedokun's (2001) study which found that the major use of the internet was surfing the Web and e-mail. Ojedokun (2001) further stated that the report of the 1998 library survey of internet users at Seton Hall University, revealed that 40.2% of respondents used the Web on a daily basis, 38% weekly, and 10.3% on a monthly basis.

The results of this study indicated that students most often used e-mail to communicate with lecturers. They used the Web predominantly for accessing academic material, as well as for searching electronic databases and for finding information using search engines. Seemingly, these two internet services work hand-in-hand in assisting students to find academic-related and personal information. McBride (2002) pointed out that e-mail is one of the cheapest means one can use to keep in contact with others for either personal or other reasons. Ojedokun (2003) stated that the internet and e-mail are invaluable tools to promote research.

Moreover, Jones (2002) emphasized that the Web and e-mail are the basis of students' educational experience. Therefore, for many college and university students, use of e-mail has become a daily activity. This finding of Jones' (2002) study resulted from the basis that the presentation of educational content on the internet was highly valuable for students, especially those who enjoyed visual presentation of information, comments and supplements to material taught in lectures. Thus according to Jones (2002) the use of the internet by university students has grown gradually over the years and the internet is now used as a major source of information especially in tertiary institutions.

In contrast to the above studies, a study done at the University of Calabar by Edem and Ofre (2010) revealed that despite the benefits of the internet for education and learning, there is a growing concern as to whether the increasing number of hours spent by students on browsing the internet limits the time and effort devoted to reading material obtained outside or from the internet. Results showed that the students appreciated the importance of reading for their academic achievement, and were also highly aware of the importance of the internet for the timely acquisition of new information and knowledge. Although 61.5% of the students in Edem and Ofre's (2010) study preferred internet browsing to reading printed books, journals and newspapers, only 36.8% of them agreed that internet use encouraged laziness in reading. The study recommended adequate library and internet access facilities and programmes in Nigerian universities to promote balanced reading and internet use activities among undergraduates. The results of the current study differ from those of Kader (2007) who found that students used the internet mainly for leisure activities which include social networking, e-mail, network games and downloading music. Thus, unlike Kader's (2007) study most third year students used the internet facilities for educational purposes in the current study.

5.6 What information services are relevant and important for students?

In order to identify the relevant and important information services for students the researcher closely examined how students ranked internet services. The results showed that 190 (74.8%) students ranked e-mail as essential, while only four (1.6%) ranked it as somewhat important. The findings also showed that 179 (70.5%) students ranked the Web as essential while only one (0.4%) student ranked it as somewhat important. In contrast to e-mail and the Web, only 45 (17.7%) students ranked telnet as essential, 89 (34.7%) students ranked it as very important and nine (3.6%) students indicated that telnet was not important. News readers

were essential for 23 (9.1%) students, very important for only 51 (20.1%) students and important for a further 89 (35%) students.

Thus the findings based on the students' ranking (adding together the scores of essential, very important and important) of the internet services showed the following services were relevant to the third year students: social networks, telnet and news reader. However, more importantly, e-mail, the Web and telnet were the most important services used by the third year students. All 254 (100%) of the students reported that Usenet was not important for them. Moreover, all (100%) students had never used Usenet while 52 (20.5%) never used FTP and 46 (18.3%) had never used social networks.

5.7 Do students have the necessary skills to use the internet?

In order to determine whether third year students have the necessary skills to use the internet, the researcher asked them to rank their ability to use the following internet services: e-mail, Web and search engines. The results of the study indicated that more than half of students, 164 (64.8%), rated their ability to use e-mail as very good followed by 90 (35.6%) students who rated their ability to use e-mail as good. None of the third year students indicated that their ability to use e-mail was poor. The findings further indicated (see Figure 3 in Section 4.3.4.2) that only 98 (38.6%) students reported their ability to use Web as very good while more than half of the students, 151 (59.4%), reported their ability to use the Web was good and only four (1.6%) reported their ability to use the Web was poor. The findings of the current study also indicated that more than half of the students, 153 (60.2%), rated their ability to use search engines as good compared to 95 (37.4%) who rated their ability with search engines as very good and only six (2.4%) rated their ability to use search engines as poor.

With a majority of 232 (91.3%) having used the internet for over 24 months one might be tempted to conclude that students had the necessary skills to use the internet. Based on the findings of the current study it is clear that the third year students had the necessary skills to use the internet. Furthermore, the ICTD Director was of the view that students had the basic competency skills required to use the internet. However, there were a few cases of students rating their ability to use the internet services as poor. Hong, Ridzuan and Kuek (2002) conducted a study at the University of Malaysia and also reported that students showed

adequate basic knowledge of the internet and viewed the university environment as supportive in using the internet. The study revealed that students who preferred the internet for learning and viewed the environment as supportive to the use of the internet were those with better basic internet skills. These results are similar to the study done by Shezi (2005) where it was found that students rated their ability to use internet services as very good and good respectively. According to Luambano and Nawe (2004), Ojedokun (2001), Ojedokun (2003) and Shezi (2005), certain students did not use the internet because they had limited skills and knowledge.

5.8 What problems do students experience when using the internet?

In the current study 184 (72%) students (see Table 25 in Section 4.3.4.4) reported that slow internet connection was a problem. However, these results were in contrast with the results of the interview scheduled with the ICTD Director who reported that the bandwidth was sufficient. The university had 200 megabytes per second (mbps) of which only 160 mbps was used while the University also had an option of increasing access to 800 mbps. More than half the students, 165 (65%), regarded restricted sites (for example social networks) as one of the problems they had encountered. A similar number, 154 (60.6%), reported that a limited number of computers with internet access was available on campus while 141 (55.5%) students pointed out that little training in the use of internet facilities was offered on campus. These results are in keeping with the Director's response concerning the availability of computers where he stated that the ratio of students to computers was 8:1. Furthermore, it should be noted that UKZN is not so different to other Higher Education Institutions with regard to computer availability to students. These results are similar to a study by Czerniewicz and Brown (2006) in the Western Cape, which showed that the range in student-computer ratios across the institutions was between 6:1 and 12:1. This is comparable to a study conducted within the social science departments of eight institutions across South Africa by Soudien, Louw and Muller (2007). In this study, Information Technology managers were asked to provide information about the availability of computers to students. This included not only the student-computer ratio but also the percentage of these computers that were unrestricted or centralized.

These constraints or challenges were also found in a study conducted by Luambano and Nawe (2004) at the University of Dar es Salaam. Furthermore, it appears that Shezi (2005) and Ojedokun (2001) identified the same students' concerns in their respective studies. On the other hand, Kubey (2001) found that studies of general internet users suggested that some people may experience psychological problems such as social isolation, depression, loneliness and time mismanagement related to their internet use. In addition, according to Schulze (2000) students experience problems when using the internet such as keeping up with developments of the Web, which demands time and effort and can lead to hours of unproductive browsing. Furthermore, students may be misinformed as Web publishing is generally not refereed and assessments of group projects present problems. Scherer (1997) argued that excessive internet use is problematic when it results in impaired functioning such as compromised grades or failure to fulfil responsibilities. These concerns were not investigated in the current study.

Similar to the results of the current study, Ojedokun (2003) reported that 22% of the respondents had the experience of between one and two years of internet use, while 73.6% had three or more years of internet use. Furthermore, Shezi (2005) found similar results and 8.8% of the students reported that they had only had six months or less of internet experience. Ojedokun (2003) also found that among the 22% of the students who had used the internet for one to two years, few had prior formal training on using the internet. Furthermore, Ojedokun (2003) found that of the 58.3% of students who used the internet very regularly, only 28% had received any training on internet use prior to the study.

5.9 Students' comments and recommendations

Out of 254 students, a majority of 243 (95.7%) students made comments and suggested recommendations regarding internet use. These comments and recommendations can be grouped into four categories. The first category consisted of 89 (35%) students who suggested that wireless hubs or connections should be made available in all residences and surrounding campus areas to facilitate access to the internet in these venues. The second category consisted of 63 (24.8%) students who identified social networks as conflicting with academic work and suggested that access to such networks should be restricted during office hours in order to accommodate academic related internet activities. These recommendations are in keeping with the interview results where the ICTD Director illustrated that the SRC

had submitted a list of students' grievances which requested the restriction of social networks during office hours. Therefore, there were no policies that regulated restriction of websites. The third category consisted of 56 (22%) students who requested additional computers in the LANs as one of the solutions to the internet access related problems. These recommendations are in keeping with the results of the interview scheduled with the Director of ICTD who stated that the ratio of students to computers was eight students per computer but ICTD was working hard to reduce the ratio to six students per computer. However, these results were in contrast with the results of the interview scheduled with the ICTD Director who reported that the bandwidth was sufficient and the university had 200 megabytes per second (mbps) of which only 160 mbps was used while the University also had an option of increasing access to 800 mbps. The fourth category consisted of 35 (13.8%) students who requested more training on internet facilities. As mentioned earlier, more than half the students, 55.5% noted that little training on the internet facilities was offered on campus.

5.10 Summary of the chapter

Chapter 5 discussed the findings of the study as presented in Chapter 4. The discussions were based on the research questions that the study attempted to answer. The key research questions of the study were outlined at the beginning of this chapter. The major areas covered in this chapter included the frequency of internet use by students, identifying the internet services used by third year students, identifying relevant and important internet information services for students, determining whether students had the necessary skills to use the internet, the problems third year students encountered and the third year students' comments and recommendations regarding the use of the internet.

Chapter 6

Conclusions and recommendations

6.1 Introduction

In Chapter 6 concluding remarks and recommendations concerning the study are made. The recommendations were based on the information presented in Chapter 4 and Chapter 5. The research questions bearing out the study are presented once more in light of the purpose of the study, which was to investigate the use of the internet by third year students of the Faculty of Humanities, Development and Social Science at the University of KwaZulu-Natal, Pietermaritzburg campus.

6.2 Revisiting the research questions

The study endeavoured to respond to the following key research questions regarding the use of internet services by undergraduate third year students:

- How often do students use the internet?
- What do students use the internet for?
- What internet services do students use the most and why?
- What information services are relevant and important for students?
- Do students have the necessary skills to use the internet?
- What problems do students experience regarding the use of the internet?

6.3 Summary of the study

Chapter One provided an introduction to the study by presenting a background of the study, an outline of the research problem, rationale of the study, definition of key terms relevant to the study, the broader issues were discussed, the conceptual framework which outlined the concept of network literacy, the research questions which were asked as well as the delimitation of the study.

The focus of Chapter Two was a review of the related literature on the use of the internet by students. Studies conducted outside Africa, followed by studies done in Africa and then studies done in South Africa were reviewed in this chapter. Having briefly discussed the general timeline of the internet, the chapter then reviewed the introduction of the internet in

higher learning institutions. Chapter Two also reviewed the frequency of the internet use by students and highlighted problems or challenges encountered by students when using the internet.

The research design and methods adopted in the study were discussed in Chapter Three. The approach that the study employed was a triangulation approach where by both qualitative and quantitative data were collected. The choice of instruments used was dictated by the nature of the problem under study, which required collection of factual information to describe the use of the internet by undergraduate third year of the Faculty of HDSS students at UKZNP. The instruments used were the self-administered questionnaire for students and a scheduled interview for the Director of ICTD. To ensure validity and reliability of the study, a pre-test of the questionnaire was done. The data was analyzed using the SPSS and the qualitative data was analyzed using thematic content analysis.

Chapter Four presented the results of the study, which set out to investigate the use of the internet by undergraduate third year students of the Faculty of HDSS at the UKZNP. The results of the study have sufficiently answered the key research questions of the study. Questionnaire results presented background information of the respondents and their use of internet facilities. The result of the interview schedule which presented the Director's view regarding the budget allocated to internet facilities, infrastructure, staffing, licensing and copyright agreements and usage were also discussed. Recommendations regarding the use of the internet by third year students were also discussed.

Chapter Five discussed the findings of the study as presented in Chapter Four. The discussions were based on the research questions that the study attempted to answer. The key research questions of the study were outlined again at the beginning of this chapter. The major areas covered in this chapter included the frequency of internet use by students, identifying the internet services used by third year students, identifying relevant and important information services for students, determining whether students had the necessary skills to use the internet, the problems third year students encountered and the third year students' comments and recommended suggestions regarding the use of the internet.

Chapter Six provided a summary of the study and discussed the conclusions and recommendations of the study, including future research topics related to the study.

6.4 Conclusions

There were significant outcomes from the survey of the 254 undergraduate third year students of the Faculty of HDSS at UKZNP and the following conclusions were drawn.

Based on the results of the study it may be concluded that a majority of 252 (99.2%) third year students used the internet on campus and only 97 (38.2%) of the third year students used the internet off campus as well. The reasons why students did not use the internet off campus was that access was costly, students did not have access to the internet off campus and did not have access to a computer off campus. It may also be concluded that a majority of 232 (91.3%) students had used the internet for more than two years and 32.7% spent seven to nine hours on the internet per week. Thus most of the third year students were familiar with using internet services.

The third year students used the following internet services: e-mail, the Web, social networks, telnet and file transfer. Of these services the top three internet facilities used by the third year students were e-mail (99.2%), the Web (93.3%) and social networks (66.7%). It may be concluded that the third year students used the internet mostly for academic purposes unlike some of the studies such as Kader's (2007) where students used the internet mostly for recreational purposes. In addition students preferred the University GroupWise e-mail although they had other e-mail accounts such as Gmail and Yahoo mail.

Based on the results of the study it may be concluded that of all the internet services, e-mail and the Web were the most used by the undergraduate third year students from the Faculty of HDSS. In relation to these services conclusions may be drawn based on the findings of the study that 44.5% students used e-mail daily and 35.4% students used e-mail two to four times a week. In terms of the Web, 38.6% students used the Web daily and less than half, (40.9%) of the students used the Web two to four times a week. During the interview, the ICTD Director estimated, without giving solid figures, that e-mail, the Web and social networks were mostly used by students. In contrast to e-mail and the Web, only 45 (17.7%) students ranked telnet as essential, 89 (34.7%) students ranked telnet as very important and only nine (3.6%) students indicated that telnet was not important. News readers were essential for 23 (9.1%) students, very important for only 51 (20.1%) students and important for a further 89 (35%) students. Social networks were essential for only 24 (9.4%) students while 35 (13.8%)

students regarded social networks as very important and 61 (24%) reported social network as not important.

Looking at the results of the internet services used the most, one may conclude that e-mail, the Web, social networks, telnet and news readers were important to the third year students. The study revealed that 74.8% third year students ranked e-mail as essential while 70.5% students ranked the Web as essential and 66.7% of third year students used social networks. Therefore, it can be concluded that the most relevant and important internet services to third year students were e-mail, the Web and telnet. The most popular e-mail software for third year students was GroupWise which was mostly used to communicate with lecturers at UKZNP. The most popular social network for third year students was FaceBook.

Findings showed that more than half of students 64.8% rated their ability to use e-mail as very good followed by 35.6% students who rated their ability to use e-mail as good. Only 38.6% students reported their ability to use Web as very good while more than half of the students, 59.4%,reported their ability to use the Web as good and only 1.6% reported their ability to use the Web as poor. More than half of the students, 60.2%, rated their ability to use search engines as good compared to 37.4% who rated their ability with search engines as very good and only 2.4% rated their ability to use search engines as poor. With a majority of students (91.3%) having used the internet for more than two year and the ranking of ability to use internet services results one may conclude that students had the necessary skills to use the internet. The most popular search engines were Google and Yahoo but students favoured Google more than Yahoo. Based on the results one may conclude that all 254 (100%) students reported that Usenet was not important for them. Moreover, all (100%) students had never used Usenet while 52 (20.5%) never used FTP and 46 (18.3%) had never used social networks.

Lastly, 72.4% of the third year students indicated slow internet connections as a problem they had encountered, while more than half the students, 65% of the third year students, regarded restricted sites (for example social networks) as one of the problems they had encountered. Furthermore, more than half the students, 154 (60.6%), reported that a limited number of computers with internet access available on campus was a problem while 141 (55.5%) students pointed out that little training in the use of internet facilities was offered on campus. Thus it may be concluded that the above mentioned challenges were common challenges that

students encountered when using the internet. Given the above conclusions and drawing on the conceptual framework of the study one would argue that the third year students were capable in terms of network literacy. They had the ability to use ICTs to search for and communicate information for learning purposes. In addition, third year students had the skills to use the internet facilities thus they were network literate.

6.5 Recommendations

Based on the recommendations from the students as discussed in Chapter Four and Five, the researcher recommends that:

- In order to improve the use of the internet by students, UKZNP should provide wireless hubs or connections in all residences and surrounding campus areas to facilitate access to the internet in these venues.
- The number of computers in the LANs should be increased as the majority of students accessed the internet in the LANs.
- The number of computers in the library should be increased to support access to internet facilities on campus.
- The University should increase the bandwidth from 200 mbps to 800 mbps since the ICTD Director pointed out that the University was only using 160 mbps. This might resolve the issue of slow internet connections.
- Improved bandwidth could result in lifting the restrictions on social networks allowing access during office hours.
- There should be more training offered to students on how to use the internet and its services to support educational activities as some students rated their ability to use the internet as poor and thus requested more training.
- ICTD should keep statistics of students' internet usage in order to ensure that the service is used to support educational activities.

6.6 Suggestions for further research

The present study investigated the use of the internet by undergraduate third year students of the Faculty of Humanities, Development and Social Sciences at the University of KwaZulu-Natal, Pietermaritzburg campus. Further studies that should be conducted include:

- The use of the internet by students in other faculties at UKZNP.
- The use of the internet by postgraduate students in all faculties at UKZNP.

- The use of the internet by undergraduate students from all faculties at UKZN, including all campuses.
- The use of the internet by postgraduate students from all faculties at UKZN, including all campuses.

6.7 Summary of the chapter

Chapter Six presented the major research findings, discussed conclusions and provided recommendations as well as suggesting further studies. The study fulfilled its original intention to investigate the use of the internet by the Faculty of Humanities, Development and Social Science undergraduate third year students at the University of KwaZulu-Natal, Pietermaritzburg campus. Challenges or constraints associated with the use of the internet by students were identified. The results of this study could assist both the Faculty of HDSS and ICTD in decision-making in terms of which internet services students used, places where the internet is accessed and what needs to be improved to provide a better internet service for students on the Pietermaritzburg campus.

List of works cited

AAU-see Association of African Universities . 2005. Report of the Conference on African Research and Education Network Infrastructure, Tunis, November 14 and 15. <http://www.aau.org/tunis/presentation/Tunis%20Final%20report.doc > 28 July 2010.

Abbott, M. A. 1989. Towards an understanding of the meaning of the word “use” in the phrase “use of literature.” M.I.S thesis. Pietermaritzburg: University of KwaZulu-Natal.

Abdulla, R. A. 2007. *The internet in the Arab world: Egypt and beyond.* New York: Peter Lang.

Amichai-Hamburger, Y. 2005. *The social net: understanding human behaviour in cyberspace*. London: Oxford University Press.

Anderson, K. 2001. Internet use among college students: an exploratory study. *Journal of American College Health* 50(1): 6-21.

Association of African Universities. 2005. Report of the Conference on African Research and Education Network Infrastructure, Tunis, November 14 and 15. <http://www.aau.org/tunis/presentation/Tunis%20Final%20report.doc > 28 July 2010.

Babbie, E. 1992. *The practice of social research*. Belmont: Wadsworth.

Babbie, E. and Mouton, J. 2001. *The practice of social research*. Oxford: University Press.

Bailey, K. 1987. *Methods of social research*. New York: Free Press.

Banks, M. A. 1997. *The internet unplugged: utilities and techniques for internet productivity online and off.* Wilton, CT.: Online Inc.

Bao, X. M. 1998. Challenges and opportunities: a report of the 1998 library survey of internet users at Seton Hall University. *College and Research Libraries* 59(6): 535-543.

Birley, G. and Moreland, N. 1998. *A practical guide to academic research*. London: Kogan Page.

Bless, C. and Higson-Smith, C. 1995. *Fundamentals of social research methods: an African perspective.* 2nd ed. Kenwyn: Juta.

Bon, A. 2007. Can the internet in tertiary education in Africa contribute to social and economic development? *International Journal of Education and Development using Information and Communication Technology* 3(3): 122-131.

Boswell, W. 2005. A short history of the internet: internet timeline. <http://websearch.about.com/od/whatistheinternet/a/historyinternet.htm> 30 June 2010.

Boulos, M. N. K., Maramba, I. and Wheeler, S. 2006. Wikis, blogs and podcasts: a new generation of Web-based tools for virtual collaborative clinical practice and education. *BioMed Central Medical Education* 6:41.

Busha, C. H. and Harter, S. P. 1980. *Research methods in librarianship*. New York: Academic Press.

Buys, M. 2004. Customer satisfaction with internet banking websites: an empirical test and measuring instrument. *Proceedings of the 2004. South African Institute of Computer Scientists and Information Technology. (SAICSIT) Conference*, Stellenbosch, South Africa.

Cairo declaration. 2006. The extraordinary conference of the African Ministerial Council on Science and Technology. Adopted from: Cairo, Arab Republic of Egypt. <http://www.bamako2008.org/en/docs/cairo-declaration-24-nov-2006.pdf > 28 July 2010.

Cantoni, L. and Tardini, S. 2006. *Internet*. New York: Routledge.

Chachage, B. L. 2001. Internet cafe in Tanzania: a study of the knowledge and skills of end-users. *Information Development* 17(4): 226-230.

Chapman, L. 2000. Russian roulette or Pandora's Box: use of internet as a research tool. < www.vala.org.au/2002/2002pdf/18chpmn.pdf > 28 July 2010

Chinyemba, A. 2003. Management of university records: a case study of the University of Natal, Pietermaritzburg. Master of Information Studies thesis. Pietermaritzburg: University of Natal.

Cohen, L., Manion, L. and Morrison, K. 2002. *Research methods in education.* 5th ed. London: Routledge/Falmer.

Cornu, J. M. 2005. How people use the internet today in Africa. <http://portal.unesco.org/ci/en/ev.php-url_id=1514&url_do=do_topic&url_section=20.html > 10 March 2010.

Crocker, S. 2000. Living internet, virtual salt. < http://www.livinginternet.com/r/ri_icr.htm. > 28 June 2010.

Cutajar, J. R. 2004. Accepted computer user and internet policy, Chiswick House School St. Martin's College. < http://www.smcict.net/docs/internet%20policy.pdf > 28 June 2010.

Czerniewicz, L. and Brown, C. 2006. The Virtual Möbius Strip. Centre for Educational Technology Research Report Series 1. Cape Town: University of Cape Town. <http://www.cet.uct.ac.za/virtualmobius> 28 July 2010.

Davis, P. M. 2002. The effect of the Web on undergraduate citation behaviour. *College an Research* Libraries 63(1): 6-53.

De Vos, A. S. 1998. *Research at grass roots: a primer for the caring professions*. Pretoria: Van Schaik Publishers.

De Vos, A. S., Strydom, H., Fouche, C. B. and Delport, C. S. L. 2002. *Research at grass root: for the social science and human services professionals.* 2nd ed. Cape Town: Van Schaik Publishers.

Deak, E. J. 2004. *The economics of e-commerce: the internet*. South Western: Thomson.

Denzin, N. and Lincoln, Y. (eds.) 2003. Introduction: the discipline and practice of qualitative research. In Denzin, N. and Lincoln, Y. *The landscape of qualitative research: theories and issues*. Thousand Oaks: Sage Publications. pp.1-45.

Dillner, M. 2000. Internet safety and ethics for the classroom. <http://www.readingonline.org/edutorial/ethics.html. > 18 June 2010.

du Plessis, P. J., Mostert, P. G. and North, E. J. 2004. Period of internet usage: an indicator of the buying behaviour of internet users? *South African Journal of Education and Media Studies* 7(1): 110-119.

Edem, M. B. and Ofre, E. T. 2010. Reading and the internet use activities of undergraduate students of the University of Calabar. *African Journal of Library, Archives and Information Science* 19(1): 11-18.

Ellsworth, M. V. 1996. *Marketing on the internet: multimedia strategies for the WWW*. New York: John Wiley.

Eppler, M. J. and Mengis, J. 2002. The concept of information overload: a review of literature from Organization Science, Marketing, Accounting, MIS and related Disciplines. *MCM Research Paper*. University of St. Gallen: Net Academy.

Falconer, D. J. and Mackay, D. R. 1999. The key to the mixed method dilemma. <http://www.vuw.ac.za.zn/acis99/papers/paperFalconer-128.pdf> 15 August 2010.

Gaimster, J. and Gray, D. 2000. Harvesting knowledge: the role of the internet in helping students to develop independent research skills: a case study. <www.fashion.arts.ac.uk/index.htm > 08 July 2010.

Gash, S. 2000. *Effective literature searching for research.* 2nd ed. Aldershot: Gower.

Gay, L. 1981. *Educational research: competencies for analysis and application*. Columbus Ohio: Merrill.

Gelernter, J. 2001. The internet: yesterday, today and tomorrow. *Information Outlook* 5(6). <http://www.sla.org/content/shop/information/infoonline/2001/jun01/gelenter.cfm.> 02 July 2010.

Goldfarb, A. 2006. The (teaching) role of universities in the diffusion of the internet. *International Journal of Industrial Organizations* 24: 203-225.

Goldsborough, R. 2001. Instant messaging: on the internet, chat isn't idle anymore. *Community College Week* 13(6): 5-14. <http://www.accessmylibrary.com/coms2/summary.htm > 18 June 2010.

Green, E. W. 2006. The Web of social networking. *US News Report* 139(18): 2-8. . < www.googlescholar/imf.org/2006/econdata.html. > 28 July 2010.

Grimes, G.A. and Borman, J. 1997. *Southern African 10 minutes guide to the internet Windows 95*. Indianapolis: Que.

Hadebe, T. B. 2010. Use of electronic databases by masters students in the Faculty of Humanities, Development and Social Sciences at the University of KwaZulu-Natal Pietermaritzburg Campus. M.I.S. Thesis. Pietermaritzburg: University of KwaZulu-Natal.

Harris, R. 1997. Evaluating research sources. <http://www.virtualsalt.com/evalu8it.htm. > 14 June 2010.

Hawkins, R. 2005. Enhancing research and education connectivity in Africa: the findings of the African tertiary institution connectivity study (ATICS) and lessons for the future of campus networks. World Bank. < http://www.oecd.org/dataoecd/49/48/35765204.pdf > 27 July 2010.

Holmes, L. 1997. What is normal internet use? < http://mentalhealth.about.com> 18 June 2010.

Hong, K-S., Ridzuan, A. A. and Kuek, M-K. 2002. Students' attitudes towards the use of the internet for learning: a study at the University of Malaysia. *Educational Technology and Society* 6(2): 45-49. <http://ifets.iee.org/periodical/6-2/5.html.> 17 August 2009.

Hu, C. 1996. Network literacy: new task for librarian on user education. Paper presented at the 62nd IFLA General Conference-Conference Proceedings, 25-31 August.

International Monetary Fund. 2007. World Economic Outlook Database: data for the year 2006.< www.googlescholar/imf.org/2006/econdata.html. > 30 July 2010.

Internet World Stats. 2010. Internet usage statistics for Africa: Africa internet usage and population stats. <www.internetworldstats.com/af/za.htm> 08 March 2011.

Jagboro, K. O. 2003. A study of internet usage in Nigerian universities: a case study of Obafemi Alowolo University, Iie-Ife, Nigeria. *First Monday* 8(2) http://fisrtmonday.org/issues/issue8volume2/jagboro/index. 05 July 2010.

Jones, S. 2002. The internet goes to college: how students are living in the future with today's technology. Pew internet and the American life project. <http://www.pewinternet.org> 10 March 2010.

Johns, R. 2003. Application of web-based learning in teaching social work law. *Social Work Education* 22: 429-443.

Jones, S., Johnson-Yale, C., Millermaier, S. and Perez, F. S. 2008. Academic work, the internet and US college students. *Internet and Higher Education* 11: 165-177.

Kader, C. B. 2007. A study on how university students in Durban, KZN, use the internet during their spare time. M.Ed. Thesis. Durban: University of KwaZulu-Natal.

Kaniki, A. M. 2006. Doing an information search. In Terre Blanchee, M., K. Durrheim and D. Painter (eds). *Research in practice: applied methods for the social science.* Cape Town: University of Cape Town Press. Pp. 19-32.

Kim, S. 2003. Research paradigms in organizational learning and performance: competing modes of inquiry. *Information Technology, Learning and Performance Journal* 21(1): 9-18.

Kitao, K. 1999. How to use internet resources for students. <http://ilc2.doshisha.ac.jp/users/kkitao/japanese/library/handout/plugin99.htm.> 27 July 2009.

Krol, E. 1994. *The whole internet user's guide and catalog*. Sebastopol: O'Reilly and Associate.

Kubey, R. W. 2001. Internet use and college academic performance decrements: early findings. *Journal of Communication* 51(1): 366-381.

Kwanya, T., Stilwell, C. and Underwood, P.G. 2009. Library 2.0: revolution or evolution. *South African Journal for Library and Information Science* 75(1): 56-67.

Leedy, P. 1997. *Practical research: planning and design. 6th ed*. New Jersey: Prentice Hall.

Leiner, B. M., Cerf, V. G., Clark, D. D., Kahn, R. E., Kleinrock, L., Lynch, D. C. and Perzynski, A. 2004. Habermas and the internet. <http://socwww.cwru.wd/%7Eatp5/habermas.html.> 29 June 2010.

Lindsay, W. and McLaren, S. 2000. Internet: an aid to students research or a source of frustration. *Journal of Educational Media* 25 (2): 115-128

Luambano, I. and Nawe, J. 2004. Internet use by students at the University of Dar es Salaam. *Library Hi Tech News* 10: 13-17.

Lubans, J. 1999. Key findings on Internet use among students. < http://www.firstmonday.dk> 11 March 2010.

Martin, A. 2006. Literacies for the digital age: preview of Part1. Digital literacies for learning. London: Facet Publishing pp. 1-20.

Maxwell, P. 2009. LIIS 713/813 Web-based Information Systems (WBIS). Lecture notes. Pietermaritzburg: University of KwaZulu-Natal: Information Studies Programmme.

McBride, P. 2002. *The school's guide to the internet.* Bath: Bath Press.

McClure, R. C. 1994. Network literacy: a role of libraries? *Information Technology and Libraries* 13(2): 115-125.

McLeod, W. and Hanks, P. (eds.) 1982. *The new Collins concise dictionary of the English language*. London: William Collins and Sons.

McQueen, T. F. and Fleck, R. A. 2004. Changing patterns of internet usage and challenges to colleges and universities. *First Monday* 9(12). <http//:firstmonday.org/issue9_12/mcqueen/index.html > 28 May 2010.

Moyane, S. P. 2007. Research capacity needs in the Humanities at the University of Zululand. M.I.S. thesis. Pietermaritzburg: University of KwaZulu-Natal.

Mutula, S. 2005. Bridging the digital divide through e-governance: a proposal for Africa's libraries and information centres. *The Electronic Library Journal* 23(5): 591-602.

Myers, M. D. 1997. Qualitative research in information systems. <http://www.qual.auckland.ac.za/ > 28 July 2010.

Nachmias, R. and Segev, L. 2003. Students' use of content in Web-supported academic courses. *The Internet and Higher Education* 6:145-157. <www.googlescholar.com/internet.htm.> 27 September 2009.

Nelson, M. R. 2001. We have the information you want, but getting it will cost you: being held hostage by information overload. *Journal of Marketing Research* 23: 684-696 <www.acm.org/crossroads /xrds1-1/mnelson.html.>13 March 2009.

Newell, R. 1993. Questionnaires. In: Gilbert, N. (ed.) *Researching social life.* London: Sage.

Ngulube, P. 2003. Preservation and access to public records and archives in South Africa. PhD. thesis. Pietermaritzburg: University of Natal.

Ngulube, P., Shezi, M. and Leach, A. 2009. Exploring network literacy among students of St. Joseph's Theological Institute in South Africa. *South African Journal for Library and Information Science* 75(1): 56-67.

Oblinger, D. G. and Oblinger, J. L. (eds.) 2005. Educating the Net Generation. *Educause* <http://www.educause.edu/educatingthenetgen > 27 July 2010.

Ojedokun, A. 2001. Internet access and usage by students of the University of Botswana. *African Journal of Library, Archives and Information Science* 11(12): 97-107.

Odjedokun, A. 2003. Internet access competences and the use of the internet for teaching and research activities by University of Botswana academic staff. *African Journal of Library, Archives and Information Science* 13(1): 43-53.

Ozcan, N. K. and Buzlu, S. 2007. Internet use and its relation with the psychosocial situation for a sample of university students. *CyberPsychology and Behaviour* 10(6): 767-772.

Papanis, E., Giavrimis, P. and Papani, E-M. 2010. The contribution of the internet into learning. *Review of European Studies* 2(1): 54-60.

Pehrson, B. and Ngwira, M. 2006. Optical fiber for research and education networks in Eastern and Southern Africa. University of Malawi. < http://www.idrc.ca/uploads/user-S/11083295861PAREN_Reportv15.doc > 27 July 2010.

Persall, J.1998. *The Oxford dictionary of English*. New York: Clarendon.

Philips, C. 2007. Spanners for the virtual ego: An evaluation of facilities for online communities on the World Wide Web. < http://mms.ecs.soton.ac.uk/2007pepers/1.pdf > 18 June 2010.

Powell, R. 1985. *Basic research methods for librarians*. New York: Clarendon.

Powell, R. R. 1991. *Basic research methods for librarians*. 2nd ed. New Jersey: Ablex.

Powell, R. R. 1997. *Basic research methods for librarians*. 3rd ed. Greenwich, Conn: Ablex.

Pratt, B. 1992. *Choosing research methods: data collection for development workers*. London: Oxfam. < http://www.amazon.com/books.htm > 21 June 2010

Prytherch, R. 2000. *Harrod's librarians' glossary and reference book: a dictionary of over 9, 600 terms, organizations, projects and acronyms in the area of information management, library science, publishing and archive management.* 9th ed. Aldershot, Hants: Gower.

Robson, C. 1993. Real world research: a resource for social scientists and practitioners. London: Wiley-Blackwell. < http://www.amazon.com/books.htm > 20 July 2010.

Rohleder, P., Swartz, L., Bozalek, V., Carolissen, R., and Leibowitz, B. 2007. Students' evaluations of the use of e-learning in a collaborative project between two South African universities. *Higher Education* 56 (1): 95-107. ,< http://www.springlik.com > 18 June 2010.

Sarantakos, S. 2005. *Social research.* 3rd ed. New York: Palgrave Macmillan.

Saunders, M., Lewis, P. and Thornhill, A. 2000. *Research methods for business students*.

2nd ed. Harlow, Essex: Pearson Education.

Scherer, K. 1997. College life online: healthy and unhealthy internet use. *Journal of College Student Development* 38(6): 655-665.

Schofield, J. and Davidson, A. 2002. *Bringing the internet to school: lessons from an urban district.* San Francisco: Jossey-Bass.

Schulze, S. 2000. The online learning environment of students: educators' perspectives. *Journal of Education and Training* 21(1): 25-38.

Selwyn, N., Marriott, N. and Marriott, P. 2000. Net gains or net pains? business students' use of the internet. *Higher Education Quarterly* 54(2): 166-186.

Servon, L. 2002. *Bridging the digital divide: technology, community, and public policy*, Malden, MA.: Blackwell. <www.Googlbooks.com> 16 February 2010.

Shezi, M. S. 2005. An investigation into the use of the internet by students at St. Joseph's Theological Institute, KwaZulu-Natal, South Africa. M.I.S. Thesis. Pietermaritzburg: University of KwaZulu-Natal.

Soudien, C., Louw, J. and Muller, J. 2007. Instructional technologies in Social Science instruction in South Africa: final report prepared for Mellon Foundation. <www.googlescholar/ict/social/science.htm> 27 July 2010.

Stanton, M. A. and Stöver, C. 2005. RedCLARA: Integrating Latin America into global Research & Education networking. DANTE, UK. <www.terena.nl/events/tnc2006/core/getfile.php?file_id=763 > 17 May 2010.

Steiner, R., Tirivanyi, N., Jensen, M. and Gakio, K. 2004. African Tertiary Institutions Connectivity Survey.

<http://www.dgroups.org/groups/cgiar/InternetAfrica/docs/ATICS2004Report.pdf.> 30 July 2010.

Steiner, R., Tirivayi, A., Tirivayi, N., Jensen, M., Hamilton, P. and Buechler, J. 2005. PAREN, PAREN, Promoting African Research and Education Networking. A study sponsored by IDRC. <http://www.idrc.ca/uploads/userS/11083295861PAREN_Reportv15.doc > 27 July 2010.

Strove, S. 2001. Rural internet connectivity. Telecommunications and Information Policy Institute, University of Texas at Austin, Austin, TX 78712, USA. <www.GoogScholar.com> 30 May2010.

SURFnet. 2002. Het Internet georganised. <https://www.surfnet.nl/publicaties/brochures/organisaties > 28 July 2010.

Swisher, R. and McClure, C. R. 1984. *Research for decision making: methods for librarians*. Chicago: ALA.

Tadasad, P. G., Maheswarappa, B. S. and Alur, S. A. 2003. Use of internet by undergraduate students of P. D. A. College of Engineering, Gulbarga. *Annals of Library and information Studies* 50(1): 31-42. <http://wota.liu.edu/dois/data/articles/giannlsv> 20 May 2010.

Terre Blanche, M. and Durrheim, K. 1999. Histories of the present: social science research in context. In Terre Blanche, M. and Durrheim, K. (eds.) *Research in practice*. Cape Town: University of Cape Town Press.

Thody, E. C. G. 2006. Writing and presenting research. London: Sage Publications.

University of KwaZulu-Natal, Faculty of Education. 2010. *Understanding research: learning guide and reader*. Pietermaritzburg: University of KwaZulu-Natal.

Wen, J. R. and Shih, W. L. 2006. Exploring the information literacy competence standards for elementary and high school teachers. <www.elsevier.com/locate/compedu > 30 May 2010.

World Bank. 2005. ICTs at a Glance: country reports. <http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:20459133~menuPK:1192714~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html.> 26 July 2010.

Ying-Fang, C. and Peng, S. S. 2008. University students' internet use and its relationships with academic performance, interpersonal relationships, psychological adjustment and self-evaluation. *CyberPsychology and Behaviour* 11(4): 467-469.

Appendix 1: Students questionnaire

ID_____

Survey questionnaire for collecting data on the use of the internet by undergraduate third year students of theFaculty of Humanities, Development and Social Sciences at the University of KwaZulu-Natal Pietermaritzburg campus

Please note: All the information collected in this study will be used strictly for writing an academic thesis. **Individual identification of participants is not important in this study**.

Instructions

Please indicate your appropriate response by means of a cross or tick. Where possible please elaborate in the space provided.

PART A: BACKGROUND INFORMATION

1. What school are you in?

   1.1 [ ] School of Anthropology, Gender and History Studies

   1.2 [ ] School of Philosophy and Ethics

   1.3 [ ] School of Politics

   1.4 [ ] School of Psychology

   1.5 [ ] School of Sociology and Social Studies

   1.6 [ ] School of Languages

   1.7 [ ] School of Media and Communication Studies

   1.8 [ ] School of Arts

2. What are your majors?

   _____
   _____
   _____

3. Are you a full-time student?

   3.1 [ ] Yes

   3.2 [ ] No

4. What is your gender?

   4.1 [ ] Male

   4.1 [ ] Female

5. What is your age?

   _____

6. Are you a

   6.1 [ ] South African

   6.2 [ ] International student from the Southern African Development Community (SADC)

   6.3 [ ] International student from outside the Southern African Development Community (SADC

PART B: ACCESS TO THE INTERNET

7. Do you use the internet on campus?

   7.1 [ ] Yes

   7.2 [ ] No

8. If No, please explain why not?

_____
_____
_____

9. Where on campus do you access the internet?

   9.1 [ ] Computer laboratories (LANs)

   9.2 [ ] Library

   9.3 [ ] Residence (wireless hubs)

   9.4 [ ] Other, please specify _____

   _____

10. Do you access the internet from off campus?

    10.1 [ ] Yes

10.2 [ ] No

11. If Yes, what internet services do you use? (*Please tick all those that apply*)

11.1 [ ] Email

11.2 [ ] World Wide Web

11.3 [ ] Telnet (eg. access to library catalogue remotely)

11.4 [ ] Social Networks (Facebook, MySpace, Student Village, YouTube, Twitter etc.)

11.5 [ ] Other, please specify _____

_____

_____

12. If No, why do you not access the internet from off campus?

12.1 [ ] I do not have access to a computer off campus

12.2 [ ] I do not have access to the internet off campus

12.3 [ ] Access to the internet off campus is costly

PART C: THE USE OF THE INTERNET SERVICES/ FACILITIES

13. For how long have you been using the internet?

13.1[ ] Less than 6 months

13.2 [ ] 7 to 12 months

13.3 [ ] 13 to 18 months

13.4 [ ] 19 to 24 months

13.5 [ ] over 24 months

14. How many hours per week do you spend using the internet on average?

14.1 [ ] less than 1 hour/ week

14.2 [ ] 1 to 3 hours/ week

14.3 [ ] 4 to 6 hours/ week

14.4 [ ] 7 to 9 hours/week

14.5 [ ] 10 to 12 hours/week

14.6 [ ] over 12 hours/week

15. What internet services do you use? (*Please tick all those that apply*)

15.1 [ ] Email

15.2 [ ] World Wide Web

15.3 [ ] Telnet (eg. access to library catalogue remotely)

5.4 [ ] Social Networks (Facebook, MySpace, Student Village, YouTube, Twitter etc)

15.5 [ ] Other, please specify _____

_____

16. Please rank each of the following internet services in the order of importance.

Internet services	**Essential**	**Very important**	**Important**	**Somewhat important**	**Not important**
Electronic Email (email)					
World Wide Web (WWW)					
Telnet (eg. access to library catalogue remotely)					
News reader					
Social Networks (Facebook, MySpace, Student Village etc.					
File Transfer Protocol (FTP)					
Usenet					
Other:					

17. How often do you use the internet services listed below? Please rank each in the order of the frequency of use.

Internet services	**Daily**	**2-4 times a week**	**Once a week**	**Every two weeks**	**Once a month**	**Never**
Electronic Email(email)						
World Wide Web(WWW)						
Telnet (eg. access to library catalogue remotely)						
News reader						
Social Networks (Facebook, MySpace, Student Village and others)						
File Transfer Protocol (FTP)						
Usenet						
Other:						

18. What email services do you use (*Please tick all apply*)?

18.1 [ ] GroupWise

18.2 [ ] Gmail

18.3 [ ] Yahoo Mail

18.4 [ ] Other, please specify_____
_____

19. Please rank the following reasons for using e-mail in order of importance?

Reasons for using email	Essential	Very important	Important	Somewhat important	Not important
Communication with lectures at UKZNP					
Communication with students in and outside South Africa					
Communication with friends and relatives in and outside South Africa					
Other:					

20. Please rank the following reasons for using the World Wide Web (WWW) in order of importance?

Reasons for using World Wide Web	Essential	Very important	Important	Somewhat important	Not important
Accessing academic related materials and electronic databases					
Searching the Search engines (such Google, Yahoo, Ask and others)					
Entertainment and sports					
News (worldwide)					
Just browsing with no particular site or subject in mind					
Other:					

21. Which search engines do you use? (*Please tick all those that apply*)

21.1 [ ] Alta Vista

21.1 [ ] Ask

21.3 [ ] Being

21.4 [ ] Google

21.5 [ ] Yahoo

21.6 [ ] Do not have a favourite search engine

21.7 [ ] Other, please specify_____

22. Which of the following is your favourite internet search engine?

22.1 [ ] Ask

22.2 [ ] Being

22.3 [ ] Google

22.4 [ ] Yahoo

22.5 [ ] Do not have a favourite search engine

22.6 [ ] Other, please specify_____

_____

23. Which of the following social networking sites do you use? (*Please tick all those that apply)*

23.1 [ ] Facebook

23.2 [ ] MySpace

23.3 [ ] Student Village

23.4 [ ] Twitter

23.5 [ ] Other, please specify_____

PART D: PROBLEMS

24. How do you rate your ability to use e-mail facilities?

24.1 [ ] Very good

24.2 [ ] Good

24.3 [ ] Poor

24.4 [ ] Very poor

24.5 [ ] Do not use e-mail

25. If poor or very poor please explain why?

_____

_____

_____

26. How do you rate your ability to use the World Wide Web?

26.1 [ ] Very good

26.2 [ ] Good

26.3 [ ] Poor

26.4 [ ] Very poor

26.5 [ ] Do not use World Wide Web

26.6 I f poor or very poor please explain why?

_____
_____
_____

27. How do you rate your ability to use search engines (eg. Google)?

28.1 [ ] Very good

28.2 [ ] Good

28.3 [ ] Poor

28.4 [ ] Very poor

28.5 [ ] Do not use e-mail

28. If poor or very poor please explain why?

_____
_____
_____

29. Which of the following constraints or problems have you encountered when using the internet facilities on campus? (*Please tick all those that apply*)

29.1 [ ] Very few internet computers

29.2 [ ] Very slow internet connection (takes too long load pages)-

29.3 [ ] Very little training in the use of the internet facilities is offered to students

29.4 [ ] Restricted access to certain networking sites

29.5 [ ] Other, please specify _____
_____
_____

PART E: COMMENTS AND SUGGESTIONS

30. Please, state any additional comments, suggestion regarding internet use in the space provided below.

_____
_____
_____
_____
_____

Thank you for your time and participation.

Appendix 2: Interview schedule

Date: .....

Time: .....

The use of the internet by the Faculty of Humanities, Development and Social Science undergraduate third year students at the University of KwaZulu-Natal, Pietermaritzburg campus

Interview schedule for the Head of Information Communication and Technology Division

A. Budget

1. What portion of the University budget is allocated to the internet services?

_____

_____

_____

2. Is each campus allocated its own budget for the internet services?

- Yes
- No

3. If yes, how much is allocated to each campus?

_____

_____

_____

4. If no, how is the budget distributed across campuses?

_____

_____

_____

5. Is there a policy that guides students' access of the internet?
    - Yes
    - No

6. If yes, what is the policy?

_____

_____

_____

7. If no, why is there no policy?

_____

_____

_____

8. Are there any guidelines on how to use internet in the computer laboratories?
    - Yes
    - No

9. If yes, please explain

_____

_____

_____

10. If no, please explain

_____

_____

_____

11. Are there policies restricting or regulating access to certain websites such as social networks?
    - Yes
    - No
12. If Yes, what are the policies?

_____

_____

_____

13. If No, why are there no policies?

_____

_____

_____

B. Infrastructure

14. Are there any challenges regarding the availability of computer equipment in the university specifically PMB campus?
    - Yes
    - No

15. If yes, what are the challenges?

_____

_____

_____

16. Is there enough bandwidth for internet access?
    - Yes
    - No

17. If Yes, please explain why?

_____

_____

_____

18. If No, please explain why not?

_____

_____

_____

19. Are there any other problems/ challenges regarding internet connectivity?
    - Yes
    - No

20. If Yes, what are the challenges/ problems?

_____

_____

_____

C. Staffing

21. Does the university have sufficient staff to counter any challenges related to internet connectivity and access?
    - Yes
    - No

22. If yes, please explain.

_____

_____

_____

23. If no, please explain.

_____

_____

_____

24. In each computer laboratory are there sufficient staff members available to assist users with any internet and ICT related challenges?
    - Yes
    - No

25. If yes, please explain.

_____

_____

_____

26. If no, please explain.

_____

_____

_____

D. Licensing and copyright agreements

27. What is the nature of the licensing and copyright agreements that the university has in terms of the internet services?

_____

_____

_____

28. Are there any policies restricting or regulating access to certain websites such as social networks?

_____

_____

_____

E. Usage

29. What are the internet services that students use the most?

_____

_____

_____

30. Do you think students have the skills to use the internet?

_____

_____

_____

Thank you for your time

Appendix 3: Informed consent letter

Letter of consent for the students

The use of the internet by the Faculty of Humanities, Development and Social Science undergraduate third year students at the University of KwaZulu-Natal, Pietermaritzburg Campus (UKZN PMB)

Dear Participant

I am a Masters student at the University of KwaZulu-Natal investigating the use of the internet by the Faculty of Humanities, Development and Social Science undergraduate third year students on the Pietermaritzburg campus.

As you know the internet has emerged as a very important resource in the academic context supporting learning in universities. It has also emerged as a resource supporting non-academic activities. Given that we know very little about students' use of the internet on the PMB campus, I am inviting you to participate in this research because of the valuable contribution you can make in terms of improving our understanding of internet usage among students including, for example, what internet resources are being used, the reasons for such usage and what problems students encounter when using the internet on campus including a lack of technological skills. On the basis of the results suggestions can then be made toward improving the internet usage experience of students. Your participation is thus very important.

If you agree to participate I would like you to please complete the questionnaire which will be collected from you after class.

I commit myself to keeping the information you provide confidential. You have the right to withdraw at any point of the study, for any reason, and without any prejudice, and the information you have provided will be turned over to you. There are no known risks from being part of this study and taking part in the research is completely voluntary.

I appreciate your participation in this research. If you have any questions about the research study itself, please contact me.

Thank you

Sincerely

Siyanda E. Kheswa

Information Studies Programme, School of Sociology and Social Studies

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