Surfing for Knowledge:

How Undergraduate Students use the Internet for Research and Study Purposes.

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Abstract

Surfing for Knowledge:

How Undergraduate students use the Internet for research and Study Purposes.

The developments in technology and concomitant access to the Internet have reshaped the way people research in their personal and academic lives. The ever-expanding amount of information on the Internet is creating an environment where users are able to find what they seek for or add to the body of knowledge or both. Researching, especially for academic purposes, has been greatly impacted by the Internet's rapid growth and expansion. This project stemmed from a desire to understand how student's research methods have evolved when taking into account their busy schedules and needs. The availability and accessibility of the Internet has increased its use considerably as a straightforward medium from which users obtain desired information. This thesis was to ascertain in what manner senior undergraduate students at the University of Kwa-Zulu Natal Pietermaritzburg campus use the Internet for academic research purposes which is largely determined by the individual's personal preference and access to the Internet. Through the relevant literature review there arose pertinent questions that required answers. Students were interviewed to determine when, why and how they began using the Internet, and how this usage contributes to their academic work; whether it aids or inhibits student's research. Through collection and analysis of data, evidence emerged that students followed contemporary research methods, making extensive use of the Internet, while a few use both forms of resources, unless compelled by lecturers when following assignment requirements. As a secondary phase, from the results received from the students, lecturers were interviewed. Differing levels of restrictions on students were evident; they themselves use the Internet for academic research purposes. Lecturers were convinced they had the understanding and experience to discern what was relevant and

factual. Referring to the Internet for research is becoming more popular. This should continue to increase as the student's lives become more complex. A suggestion offered by this research project is to academic staff. Equip students from their early University years on standards they should follow in order to research correctly, as opposed to limiting their use of the Internet leading in part to students committing plagiarism being unaware of the wealth of reputable resources available for their use and benefit on the Internet.

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Chapter 1: Introduction

The evolution of the Internet has brought about a significant change in the social organization and dissemination of knowledge. At the very least, the contemporary student is faced with a choice between using either traditional resources (such as textbooks and the physical library) or Internet resources in their studies. In addition, the University environment provides a contested arena for the use of these differing knowledge resources because, in some contexts, students are encouraged to use online resources, while in others the use of the Internet is actively discouraged. The aim of this research project was to determine the use of the Internet as a researching tool in a tertiary education facility, thus the title of the project is "Surfing for knowledge: How undergraduate students use the Internet for research and study purposes".

The Internet has revolutionised the way in which people research, most notably by its capacity to transcend the spatial, temporal limitations and to some extent the restricted access associated with traditional research methods. The Internet is fast and easy as one is able to find or access what is sought through search engines specifically designed to facilitate information retrieval. Not only is it fast but one may search for the desired information where it is most convenient, thus eliminating the necessity of visiting the library. These online networks provide globalised information, as it is all integrated on the Internet. There is an ever increasing amount of data being published online, ranging from individual opinion through official information distribution and informed commentary all the way to traditional peer-reviewed research. At a more general level, the Internet is also changing the knowledge regime in which students must pursue their studies. The development of the Internet has led to knowledge or, more accurately, an information explosion, initially described by Vannevar Bush who, as early as 1945, was arguing that the rapid growth of knowledge was beginning to "enormously extend the record"; however he explained that even then they were hardly able to consult it to make sense of the record (42). It is for this reason that he proposed the hypothetical invention of a machine he called the memex which would enable researchers both to draw on the ever-increasing and evolving body of knowledge, as well as to keep a record of the paths that had been taken while exploring that knowledge.

In this digital era, in which knowledge has increased exponentially, the emergence of new media and the Internet has provided the infrastructure for several new developments. Firstly, there is ubiquity of access and the consequent weakening of the hierarchical spaces that have hitherto shaped access to knowledge. Internet connectivity has now made it possible to access information from virtually anywhere, provided, of course, one can afford to do so. Secondly, the Internet, with its ability to combine interpersonal and broadcast communication (Lievrouw, 2011), has overcome the "natural barriers" that previously structured knowledge. It is now possible to access vast bodies of information, ranging from opinions, previously reserved for face-to-face communication, all the way to complex and technical arguments now available in online journals. Finally, the development of Web 2.0, with its user-friendly interface and encouragement of interactivity makes it extremely easy for almost any user to contribute information or opinions. This both increases the information available and, fosters a growing sense of commons knowledge amongst users (Lievrouw, 2011). This has led to a sense of the democratisation of knowledge processes as they are dislodged from the arena of the expert.

The particular aim of this project is to understand the way students are negotiating this new knowledge regime. Investigation included to what extent they are adopting the Internet as opposed to the more traditional methods of accessing knowledge or doing their research and what are their attitudes to the changing circumstances of their studies. The overall structure of this research project will follow Leah Lievrouw's argument that new media ought to be studied as the "combination of material artefacts, people's practices, and the social and organizational arrangements involved in the process of human communication" (Lievrouw, 2011; 15). The project will further determine whether the limitations set by the lecturers are understood and adhered to, as well as if the potential of the Internet as a research tool is being fully exploited. The contribution made by this project aims to highlight the understanding of the changing nature of the negotiation and production of knowledge in the digital age; an understanding which takes full cognisance of the commons knowledge which has led to a knowledge explosion, and the on-going democratisation of knowledge production. In order to do this I will be exploring the nature and uses of the Internet as a researching tool in a specific academic environment – the University of KwaZulu-Natal, Pietermaritzburg campus (UKZNP). The study was conducted during the second semester of 2011 at UKZNP and involved 110 third year students, so as to establish a broad base for possible answers.

The common practices followed by students will be ascertained and analysed as well as the ways in which students use the material artefacts available to incorporate their research into their schedules. It will also investigate the role differential access plays in the outcomes and performance of students. Students need to have an initial understanding of the work they are researching and a confidence about them to select the information and use it in their work - thus determining how they locate themselves within the knowledge organization of the university - will highlight how they use the Internet.

Through this project I hope to reach an understanding of the reasons how and why undergraduate students use the Internet for study purposes and the extent to which they use search engines to find their information. There is an on-going debate between the people's practices (the students) and the social and organisational environment (the University) as to whether students have sufficient knowledge of the topic they are researching to scrutinize the information and act with individual agency to determine what is relevant and important information. In order for the use of the Internet, for researching, to be effective and acceptable there needs to be a certain protocol students are able to follow to determine whether the site and information is valid and reliable, as well as set the parameters for students who wish to use the Internet.

Lecturers and academics have placed many restrictions on students who use the Internet and this is part of the institutional context within which students operate. Therefore this project will also aim to explore student understanding of and attitude towards these restrictions. They will be questioned on whether the way in which they use the Internet facilitates or hinders the organizational demands. Bearing these restrictions in mind, students need to select amongst the numerous resources available to them and be critical enough to choose what they feel is the most valid and reliable of information. The skills needed to make these discriminations will need to be discerned to determine whether the students are correctly researching or if more training on how to conduct online research needs to be supplied. Finally, the opinions and suggestions of the lecturers will be considered as they deal with the students' submissions first hand and are the main source of knowledge of what information is correct and useful.

Much of the information needed to address the research questions has been gathered from the ethnographic component of this research, which looked to collect qualitative data from the various entities within the academic environment. These players consisted of senior undergraduate students in the Humanities and Social Sciences department, with the opinions and ideas of only a few lecturers who were asked to be interviewed as a secondary phase, as they were not the main focus when researching. The students were questioned through initial questionnaires as well as in-depth interviews to gain a better understanding behind the motivations leading them to use the Internet as well as how they found their information on the web.

All of the above processes will be discussed in more detail in the methodology chapter of this project which includes a questionnaire as well as individual interviews with third year Humanities students. A chapter on the theoretical content which will aid in understanding the choices made is included so as to attempt to give a more detailed explanation of the development of the Internet and the reasoning behind the choices made. Following the methodology chapter the analysis of the results is given in a format that makes it easy to understand the prevalence of certain aspects of research and gives explanations from student perspectives showing their research methods. Finally the use by academic staff of the Internet is investigated as a secondary phase to that of the students, to understand how they research and how they expect or suggest their students do so.

Chapter 2: Theoretical Context and Literature Review

2.1 Introduction

In her book, *Alternative and Activist New Media* (2011), Leah Lievrouw argues that new media ought to be studied as the "combination of material artefacts, people's practices, and the social and organizational arrangements involved in the process of human communication" (Lievrouw, 2011; 15). Her statement provides a useful conceptual framework for analysing new media and will form the basis for this chapter. For Lievrouw, the digital media are best understood as the "product of an on-going, complementary, and mutually determining relationship between the *reconfiguration* of communication technologies and the *remediation* of communication action" (Lievrouw, 2011; 216). Although the focal theme of Lievrouw's book is activist media, she argues that this "mediation" approach is "a useful analytic framework for studying the relationship between communication, society and cultural/social change, beyond the specific context and concerns of political and cultural activism" (Lievrouw, 2011; 221). She argues that we need to move away from the linear, unidirectional models of communication found in traditional media studies to one which combines the active participation typical of interpersonal communication with the technologies and structures traditionally dealt with in mass communication studies.

The term " the information explosion", first coined by Alvin Toffler (1970), is often used to describe the rapid increase in the volume of information now available to individual users, as well as the changing and generally far less hierarchical ways in which such information can now be produced and accessed. Indeed, even when Toffler was writing, this was not a new idea; the concept was developed well before the invention of personal computers. As far back as 1945, Vannevar Bush predicted the exponential growth of information and the complexities that would rise from the resulting "information explosion" (1945; 35). In an article titled "As we may think" Bush imagined a device called the Memex, a machine somewhat analogous to a contemporary networked computer where bodies of knowledge could be created or continuously extended and stored to be called up and consulted. This

device was thought of, like the contemporary Internet, to "contain *all*" information and "facilitate access" to this information by any individual at any time (Butler, 2002; 40).

Bush was remarkably percipient in his analysis because, not only has knowledge grown exponentially, but the Internet has developed as a means of communication and information retrieval which leaves "breadcrumb trails" similar to what Bush envisioned would help researchers. Butler expounds Bush's ideal of a memex, which would record links that would allow users to "move backwards through the Web pages" that have already been visited and consulted (2002; 41). Vannevar Bush's vision of the memex finally became a reality when Berners-Lee created the protocols to aid development of what was to become the World Wide Web (Winston, 1998; 333). One of the main features of the Internet is to have all information one may need in one place to ease use and dissemination. Bush argued that the problem does not lie with the "extent and variety" of current interests being published but rather that "publication has been extended far beyond [the] present ability to make real use of the record" (Bush, 1945; 38). The design of the memex, although never implemented, has been extremely useful to the design of the Internet and the ways in which the users are now able to retrieve information.

The assimilation of data from a myriad of sources, as a result of the information explosion, led to the refining and development of the Internet and the World Wide Web (WWW). The Internet has given its users a wide range of alternative methods of acquiring information, both general and academic, and students are no exception. More recently, technological developments such as smart phones have expanded this capacity to include constant mobile access.

This shift in the dissemination of information means that students are now able to be more autonomous. As a result, the notion of a structured learning environment has altered as students are both more able and more inclined to work independently. Whereas, traditionally, lecturers were seen as the primary authorities in possession of all the necessary knowledge which students mainly assimilated through attending lectures, nowadays students are more inclined to decide whether to attend lectures, as they are able to access the information they

need online including, but not limited to, course-related materials that the lecturers may have uploaded. If the structure of University learning does not remain much as it has been for the past century – centred on face-to-face contact, and managed by academic staff members – then new media have substantially changed the reality of student learning, bringing with it new problems. Plagiarism, for example, has become a much more problematic issue within the academic environment, given both the abundance of information available on the Internet, as well as the ease of access and the ease with which material can be cut and pasted and presented as the students' work. These changes suggest that far more needs to be done both to understand the changes taking place and to develop practices that will ensure that the contemporary student makes optimal use of the new resources available. The ways in which students use the Internet to gain information should not be left to chance; instead they should be trained in and encouraged to practice the skills needed to use the Internet effectively in order to obtain as much "value" as they can (Gaffner, 1973; 2). In an economy that is increasingly "knowledge oriented" this can only be of benefit to them (Kim et al, 2006).

2.2 Material Technologies

Before one is able to understand the World Wide Web and what it has to offer, it is useful to understand its origins and development. The Internet arose from a network called ARPAnet, developed by the United States Defence force to serve as a testing ground for computer networking technologies, through which researchers could communicate with each other.

The Internet has, however, not been static. On-going changes arising from technological advances, software development and user-originated strategies have worked to ensure that the medium has remained volatile. With information growing at a rapid rate, the development and growth of the Internet has facilitated the storage of information. Technological advances in what Lievrouw calls "material artefacts" (2011; 15) have made the Internet increasingly accessible, using different technological mobile devices. In addition, it is now easy to access and engage with vast amounts of information at any time, no matter the location. The Internet has developed many sub-networks, adding to the digital archive and enhancing the medium, to create a multi-network medium that is far richer and more varied in its resources than traditional repositories such as the library.

Finally, the Internet, as a result of being a “mobilizing resource” (Hackett and Carroll, 2006; 45) with built-in interactivity, provides a shared site for students to make contact and contribute in interactive ways that are not limited to the classroom. Currently, through the Internet, there is an opportunity for "many-to-many interactivity” as users are becoming more integrated with the online world. This interactivity makes communication “flexible” as users are more aware of how to access and control the content (Rice and Haythornthwaite, 2006; 97). The Internet may be positively characterized by the “interoperability” enabled by its hyper-textual structure, which creates an interactive networked environment in which individuals are able to distribute and retrieve information (Rice and Haythornthwaite, 2006; 97).

2.2.1 The Internet, Web 1.0 and Web 2.0

The Internet has developed and expanded greatly from its original, intended, purpose. The online network has been the means by which users are able to share information back and forth almost instantaneously within a global perspective. The Internet is a gigantic network used to store, retrieve, disseminate and allow the distribution of information via linked databases. The concept of a hypertext has been used to describe not only the user-friendly interface through which users are able to access information but also the underlying structures that connect information and the various elements of the Internet. Many changes and developments have occurred due to the developments in moving from Web 1.0 to the more interactive Web 2.0. This section outlines the key features and development of the Internet, its developments and structure as a globally disseminating information researching tool.

2.2.1.1 Networks and Hypertexts

The Internet can simply be described as a series of worldwide connected electronic devices that are linked to share information and resources. The vast networked structure has been developed over many years to aid in the access and retrieval of information that is now globally available. The Internet refers to the “global information system that provides, uses or makes accessible, either publicly or privately, high level services”, for example information, layered on communications (Okin, 2005; 91). The Internet acts as a network of networks

linking many computers together to communicate with one another provided; they are both connected to the Internet. This networking has allowed users to access various World Wide Web (WWW) browsers and servers to download and view an abundance of information (Mann & Stewart, 2000; 8). The World Wide Web is a way of accessing all the material available on the Internet. The World Wide Web offers copious amounts of information and is possibly one of the most "powerful distribution channels" (Jenkins, 2002; 163) embodying a "communication technology" that some people even argue "will eradicate the inequalities and evils in society" (Jankowski, 2006; 56) that the hierarchical structure of more traditional communication systems seem to have fostered.

The Internet is unlike other communication structures as there is no one-directional information transfer, as users are able to utilise the various networks to find their intended information. The Internet has been described as a structure of networks and can be more specifically classified as a distributed network through which all information is transmitted and retrieved. A distributed network is ideal for the Internet as there is no internal hierarchical structure. All users are able to access the available information as all nodes are treated as equal. The Internet is made up of a number of networks with strong many-to-many, bi-directional communication links to aid in the dissemination of information (Galloway, 2004).

The Internet is possibly the most "complex and plural of the electronic media yet invented" (Lievrouw and Livingstone, 2006; 22). The Internet's ability to store information and its "technical sophistication is far greater" than that which was available some five or ten years ago (Lievrouw and Livingstone, 2006; 10). Information is constantly updated and increasingly rapidly available.

Archives are no longer just historical buildings housing artefacts created years before, they are now being created, stored and "maintained by lay users in virtual environments" (Gane and Beer, 2008; 85-86). It is possible to become active as these "digital libraries and data repositories can store, preserve, and provide access to digital objects anywhere in the world" allowing more use (Borgman, 2007; 173).

It is desirable for all information to be easily accessible for students and users, within these digital libraries. According to Borgman (2007), digital technologies aid in the dissemination of content to many varying users, while “intellectual property regimes” attempt to constrain access to information. Access to digital technologies allows for professionals to keep up to date with technological advancements.

In order for mobile knowledge to succeed, the access to information and the ease with which one may find the information is important. The most basic of searches may re-direct users to other sites allowing for more activity as they search further (Borgman, 2007; 167). Typically when individuals conduct research on the Internet they use the various search engines to begin their initial researching process; these channels lead users to information regardless of the amount or “complexity of the information” being researched (Fortunato et al, 2006). Many search engines rank the articles under the heading the user is searching for and, as a result, the user is offered the most popular articles, thus promoting the more dominant popular sites (Fortunato et al, 2006).

Two further factors that aid in the interactivity of the Internet are “broadband capacity”, which alludes to individuals needing easy and constant access to the Internet to utilise it at any given time; and “universal access” as a result of the mobility of the Internet as one has access world-wide (Rice and Haythornthwaite, 2006; 97). Advances in technologies and Internet developments have led to one being offered constant access to the most remote information through the various networks they use, as well as the advancement of the collected information.

Hypertext allows the linking of various subjects and affiliating them with each other through links (Moulthrop, 1991; 697). The hyper-textual structure of the Internet has ensured that access to information is not controlled or limited as in books, where the information is authored by academics in the field and therefore perceived as having more of a hierarchical structure; instead all “distributed computing systems” are in a sense hyper-textual as information is dynamically, and immediately, delivered to users in response to their demands (Moulthrop, 1991; 692).

The Internet is so vast and constantly developing into many different databases, hence the introduction of links between all common ideas and topics. The inevitable linking of these networks has been done through “hypertext” or hyperlinks. Theodor Holm Nelson coined the term “hypertext” which was imagined to be a dynamic “read/write system in which users could manipulate and alter the textual corpus” (Moulthrop, 1991; 692). Hypertexts offer an “ease with which the reader can obtain information” already uploaded online, much like one would turn to the bibliography at the end of a printed text (Levinson, 1997; 137). The Internet has given users more opportunity than ever before to “discover, retrieve, and read more scholarly content” (Borgman, 2007; 77).

As the Internet has developed and extended its interactive capacity, the amount of information available expanded and thus the need arose for users to have easy links in the form of a hyper-textual structure. The Internet allows for horizontal as well as vertical network connection to resources as new articles are constantly being uploaded.

The Internet as an information archive benefits all users as the sources and information are easier to find online than in a traditional library. Livingstone explains hyper-textuality when one uses the Internet as the articles and text become “non-linear”, opening up possibilities to various pathways, disrupting the hierarchical structure of traditional mass communication being from one sender to receiver (Livingstone, 2002; 212). *Anarchy,* the absence of an authoritative presence, and *synchronicity,* the simultaneousness of certain items such as technologies, describe how the Internet acts in a “deliberately non-organised” way allowing users to choose their own pathways (Livingstone, 2002; 212).

For those who use the Internet as their preferred medium, hypertext has been a positive development assisting them to find other articles on the same or similar topic which they possibly may not have sourced themselves. The facilitation of the dissemination of knowledge far more widely than ever before, has been one of the many achievements of digital technologies as similar ideas and topics are linked via the subjects they write about, through the various hyperlinks and networks. Publishers have gone a step further to ensure

that the use of the Internet is as easy and dynamic as possible by adding "services to search, link, and analyze electronic journals and books" making the electronic publications more interactive than print as it is faster to find the desired information (Borgman, 2007; 77). Individuals are more likely to utilize the hypertext facilities on the Internet and gain a far greater amount of information than if they were to use a book, as it is easier online than to "jump around in a book comprised of printed pages in bound sequence" (Levinson, 1997; 138). The Internet, and ultimately hypertexts, act as alternatives to the "navigational apparatus of the book" such as footnoting, glossaries or indexes, which allow the users to contextualise the information and further enable users to diversify their searches, and resources, as they are not merely using one source (Lister et al, 2003; 23).

2.2.1.2 Web 1.0 to Web 2.0

Web 1.0 was the beginning of the Internet, and comprised the features that the Internet was initially designed for. Web 1.0 sites were created as static pages and articles for users to explore and rarely return to as the information was static and not updated; rather a new article was developed. The web pages were not as interactive as current pages are; users were merely allowed access to read the information but not contribute to it (Strickland, 2008). While Web 2.0 is more interactive, information such as journal articles are rarely collaborative, as new articles are rather added to the database. Web 1.0 is described simply as having a more hierarchical structure whereby users are able to access information supplied in a read-only form, unlike Web 2.0 where since blogs and social networks have been developed more contributors can update contributions.

Web 2.0 makes interactivity, collaboration and self publication simpler; although it was always possible to do these with Web 1.0, as e-mail is a function of Web 1.0. Web 2.0 is more user-friendly for example there is an open forum where publications such as blogs are constantly updated. Web 2.0 was the next generation of the World Wide Web which allowed for the collaboration of information online, from a purely publication culture where traditionally hierarchical bodies controlled information to a participatory online culture where blogs and wikis are widely used (Webopedia, 2012). Computers have allowed users the opportunity to view more than one article at a time and create and re-edit the work. The use

of computers, coupled with Web 2.0 has integrated the information found and the interaction one has, as opposed to looking through numerous books and shuffling between hard copies (Bolter, 1991; 683).

As a result of the multi-networked labyrinth of the Internet as a function of Web 2.0, it is a structure for information storage and sharing, enabling users to access the information at any time, provided they are connected to the Internet. The Internet has evolved from Web 1.0 to Web 2.0 a multimodal, digital structure that acts as a network between information, such as text, visual and audio. The multimodal structure enhances usability, being able to connect several different modes of activity together in order to acquire the required information. Livingstone has identified the diffusion of the Internet as being the "fastest in the history" of information and communication technologies or modes, allowing more information to be shared and developed (Livingstone, 2002; 33). The multiplicity of means of access, has led to Web 2.0 being far more accessible than Web 1.0.

As the Internet has evolved to Web 2.0 it has resulted in the "change in the structure and technology of the archive" as there is a wider circulation of information resulting in the decrease of a centralized power; the Internet is "more open than ever to 'lay' access and production" (Gane and Beer, 2008; 72). This ability of one being able to add to the body of knowledge has lead to many individuals sharing their ideas to enhance the society, thus grouping "multiple intelligences" (Brown, 2002).

2.2.1.3 Using the Internet as a global information dissemination and researching tool

Web 2.0 has played an influential role in the users approach to the Internet in an academic environment. Web 2.0 has lowered the barrier to publishing online. There is now immediate and widespread access to articles at a very minimal cost compared to that of the print version (Wren, 2005). This "evolution" has been achievable through "peer review, the speed of dissemination, [and] the ease of access" (Borgman, 2007; 9). Information production is not restricted to individuals who are experts on the topic, it is shared and made "universal to all

societies" (Gane and Beer, 2008; 46), through "electronic networks" (Jankowski, 2006; 58) so all may access, share, and build onto the same information, creating an idea of a multiple intelligence. This improved publishing and accessibility has also allowed for inferior information to be posted. Students need to be aware of cross references and the reliability of sources.

As users find the Internet to be an easy medium to use and navigate, they tend to prefer to use it compared to more traditional mediums, such as the library. The Internet is "accessible to the masses" and a dynamic space where "anyone with a connection" and very little "technical knowledge" on how to use the Internet can find or produce information (Gane and Beer, 2008; 71 &72). The wide use of Web 2.0 and peer-review is able to point out inaccuracies and sites can also mark contributions as unsubstantiated so as to reduce the chance of students using unreliable sites.

Alvin Kernan pointed out that in the 20th Century the outlook for books was not positive due to many "economic and ecological" factors such as a lack of natural resources, including forests for paper and the lack of funds to maintain libraries against the ease of maintaining online library databases (Moulthrop, 1991; 698). As a result of these many implications to the production of hard copy books, Kernan, in the early 1990's, lamented that hypertext will be the "death of literature" as students and users are no longer required to go to great lengths to obtain information when it is delivered in a structured way (Moulthrop, 1991; 69). In the current day of "avant-garde computer hackers, cyberpunks and hyperspace freaks" one may hear it said that "print medium is a doomed and outdated technology, a mere curiosity of bygone days destined soon to be consigned forever to those dusty unattended museums we now call libraries" (Coover, 1992; 706). The previously pessimistic idea of books becoming redundant was a concern when Moulthrop was writing this particular book; however print mediums ensure users are offered an alternative avenue to researching through the Internet, and although users have had the Internet for some time, it continues to become even easier to use and access.

Authors and publishers seem to prefer to place their content in “propriety databases, behind firewalls” and away from easy access such as a Google search (Borgman, 2007; 90-91). Users need to be interactive and use various databases and the hypertexts available, acting as indices, to find the most appropriate sources. The contributions to the Internet were altered somewhat to favour more “rigidly organized models” such as library and online academic databases which are offered as a read-only option preventing users from altering these academic, often peer-reviewed, works (Moulthrop, 1991; 692).

According to Griffiths and Brophy, students are most likely to choose a research method that requires as little effort as possible. Fewer errors may occur if the user has the information handed to them (2005; 540). The ease of accessing the Internet means almost no effort is expended in the search for information. Interaction with the Internet and databases is usually done in three general ways. Information is either researched in a “top-down” strategy, where students start a broad search and narrow it down through links from other sites, the “bottom-up” strategy where students insert a key word into the search engine and sift through the results until they find the desired information or finally a combination of the above two strategies (Griffiths & Brophy, 2005; 542).

Jenkins contradicts Griffiths and Brophy’s idea that the Internet allows results from little effort. He rather emphasizes that new media and new technologies encourage the interactive processes. Jenkins believes that individuals, through the use of the Internet, are becoming more autonomous and powerful in their various uses of the Internet (Jenkins, 2006a; 136). Individuals are entering into a new knowledge culture, one where they are able to share their own knowledge and draw on the common ideas and knowledge researched and developed by others. One needs to be aware that individuals are multi-functional in that they may perform many various tasks simultaneously. Individuals are often the “media consumer”, “media fan”, “media producer, distributor, publicist and critic” as the Internet affords them the opportunity to be integrated. While performing these functions it is essential and critical they remain alert so as to ensure all their efforts do not result in unreliable research (Jenkins, 2002; 157).

2.2.2 Mobility

The World Wide Web has the potential to be the most "powerful distribution channel" as almost wherever the user is in the world, he or she is able to log on and interact with information (Jenkins, 2002; 163). The personal computer is no longer the only medium through which one is able to gain access to information; users are now offered an abundance of information from, numerous sources. The mobility associated with the Internet has been an influential development as, no matter where they are, users have access to an almost unlimited amount of information. The mobility of the Internet has increased even further, as access to the Internet may be obtained via a desktop computer, laptop, Smartphone or tablet, to name a few; this demonstrates the "growing use and versatility of mobile technologies" (Lievrouw and Livingstone, 2006; 6). Indeed, Tim O'Reilly urges designers and developers to keep in mind that users are accessing the Internet from their mobile devices, and as such should tailor the design of their programs to be applicable not only to the personal computer but to these mobile devices as well, as they are becoming more diverse and popular (O'Reilly, 2005; 37).

The development and availability of easily portable computing devices and the Internet have facilitated the ubiquity of knowledge as students are able to access a variety of information from where it is most convenient. Ubiquity is that state of being everywhere all the time which is how one can describe the Internet. If one has mobile access, one is constantly connected and able to be an active user of this medium. Due to the universal nature of the Internet, users are able to access the diverse and informative sites, confidently, globally.

Livingstone explains that information and communication technologies must be "rendered meaningful and so incorporated into pre-existing and novel domestic routines and practices" (Livingstone, 2002; 35). Ease of access means more users can use short, available periods of time, at their convenience, to research and explore on a more regular basis, for example when travelling or relaxing, not at a time dictated by a library's opening hours. Internet access makes research possible for those with limited access to traditional research methods.

When this research project began, Smartphone's were relatively new, offering constant access to the Internet, however at this introductory level into society they were fairly expensive, therefore not all students had access. Students were, as always, able to access the LANS and use the desktop computers on campus or at home. The access the students had was, nonetheless, easily and readily available had they decided to use it.

2.2.3 WWW in SA

South Africa can be classed as being a digital-information-poor nation as it is one of the smaller global consumers of the Internet. This is partly due to the relative poverty of the majority of South Africans, but also because of the country's limited and expensive communication infrastructure. William Gibson has adequately summed up that "the future is here, it's just not evenly distributed yet" which is possibly still the case for South Africans as many do not have access to computers or the Internet (O'Reilly, 2005; 12). The development and introduction of mobility has allowed the "voice of the voiceless" to be strengthened. In a developing context, South Africans are able to access and add to the body of knowledge through their mobile devices (Norris, 2000). In South Africa there is a great digital divide, as not all citizens have access to the same resources of digital technology.

Pippa Norris (2001) explains that there are three aspects to the digital divide that need to be understood before one can evaluate the South African situation. She describes these as the global, social and democratic divides. The *"global divide"* refers to the geographical divide that can hinder access between "industrialized and developing" countries and inhibit the ability of users to communicate and relay and retrieve information internationally (Norris, 2001). The *"social divide"* looks at the economic differences between the information rich and poor, as well as the access these individuals have to research (Norris, 2001). Norris explains that there is a large gap between the information rich and technologically advanced post-industrial countries and sub-Saharan countries, such as South Africa (Norris, 2000). South Africa lags the technological developments of the Internet and the distribution of information as it encompassed "1%" of the world's users in 2000 (Norris, 2000). The last aspect that potentially affects the use of information online would be the *"democratic divide"* amongst the online community, pertaining to those that use and contribute to the online body

of knowledge (Norris, 2001). Norris explains that to an extent South Africa fits into all of these categories as it has a diverse social, global and democratic divide through the economics many of the population face.

While the majority of South Africans make minimal use of the Internet, students studying at UKZNP have constant, free, access to the World Wide Web whether through personal access (via dial-up, broadband or wireless connections) or through using the student LANS on-campus. All students are able to use the Internet for research purposes. However, since access depends on the technologies available, some students are certainly able to use the Internet more easily than others. Ease of access is dependent on whether students are able to afford the product and understand how to use it correctly. Smart phones have improved considerably and now routinely have larger screens and better resolution. At the time of the research, a significant drawback of mobile learning and using one's cell phone as a research device was that it is difficult to search further than the first few options given by a search engine, as the screen is small and not designed for reading journal articles and accessing academic works. Although students are offered various avenues through which they are able to access the Internet on-campus, some still feel that the convenience of using mobile technologies at home is more advantageous than using no academic works at all, as not all students have a personal computer at home to access the Internet.

With respect to the UKZNP campus, it incorporates numerous elements where students are being offered information. Knowledge is transmitted through lectures; knowledge is deposited in traditional libraries; specialist knowledge is available in online journals, and commons' knowledge. This imbalance leads to an "unequal advantage being derived from its benefits", thus great care and consideration needs to be taken to ensure all individuals at the University understand and are able to access the online archives in some way (Rice and Haythornthwaite, 2006; 93). The UKZNP library offers brief orientation courses each year for students, to demonstrate how to navigate through the various available Internet academic databases; this is however optional.

2.3 Individual Practices

The next key characteristic of new media, as presented by Lievrouw, is that of "people's practices" and how, with the aid of the material artefacts, their use of the Internet as a researching tool is determined (2011; 15). The Internet has allowed individuals fortunate to be on the positive side of the digital divide to be interactive and communicate freely (Hackett and Carroll, 2006; 84-85). They are, through access to the Internet, able to retrieve information, no matter their spatial or temporal divide. Through constant consultation with the Internet, users incorporate the Internet into their everyday life, rather than access being a separate place where users go to find information (Howard et al, 2002; 47).

Interactivity may be explained as a capacity of new media which works at four different levels. Firstly, access to information via interactivity refers to the user's ability to *access* information, through the multiple channels associated with the Internet. Users are integrated and active through the numerous "public" or "private" networks available for them to access information (Borgman, 2007; 14). Secondly, download of information whereby users are able to easily *download* all the material they require through the Internet and thus become interactive "users of the media [who] shape their own experience" (Gane and Beer, 2008; 7). Thirdly, contributions of information where users are able to *contribute* to the body of information by actively uploading their own material and to offer value by adding to the body of knowledge. Finally, alterations to information is possible as users are given the opportunity to alter information through interactivity "as long as [the text] is not protected" (Gane and Beer, 2008; 7).

When it comes to the question of people's practices within the social environment, Lievrouw highlights reconfiguration and remediation (2011; 216). Reconfiguration "where users modify and adapt media technologies and systems as needed" with remediation being how "users borrow, adapt, or remix existing materials" (Lievrouw; 2011, 4). In this research, however, remediation is mostly discussed because of the way students' access and use the content for research purposes; reconfiguration is not really an issue. The individual practices investigated will be formed predominantly around remediation activity. Active participation by users will foster greater personalisation, associated with an abundance of available

information leading them to acquire almost the exact information they are researching via remediation. These concepts look to shape users, in this research particularly students' practices which will be highlighted and incorporated into the final section of this chapter.

2.3.1 Activist Media

Activist media is when individuals or users of media, such as the Internet, are encouraged and given the tools to get involved and develop or change information for the better, as opposed to accepting or downloading information for their own use (Waltz, 2005; 3). For many, the key value of the Internet is its capacity to facilitate active social engagement. Lievrouw, for example, explains activist media to be a driver of "social change" with users and their projects as the "agents" for change (2011; 68). Through the development and creation of interactive systems, the difference between producer and consumer becomes increasingly difficult to sustain as they have become integrated. This integration is the result of interactivity, as the Internet and these texts are constantly available for users to access and alter - remediation.

The concept of activist media serves to emphasise the ways in which digital media facilitate a user-oriented realm. This does not necessarily follow the procedures preferred by the software developers or organisations within which such use takes place. Clemencia Rodriguez argues that "alternative media" is no longer an appropriate term to describe the Internet as a medium, as it becomes increasingly ubiquitous (Waltz, 2005; 21). She suggests that the term "citizens' media" is better suited to describe both *who* is contributing and *how* they are producing media in the contemporary context, which is created and altered by the citizens as opposed to a hierarchical system of media houses (Waltz, 2005; 21).

Remediation and reconfiguration are the processes users engage in that are heightened by the increased accessibility to the Internet. Remediation facilitates and supports "communicative action and representation" as individuals access and actively manipulate the data to suit their particular need and frame of reference before republishing it (Lievrouw and Livingstone, 2006; 8-9). Other forms of media, such as books, have been remediated into electronic

versions for all Internet users to access. The ease with which users are able to access and use the Internet shows how effortless it is to incorporate research into their daily lives. Previously users, such as students, would have to find time to go to the library and look through the printed books, whereas active users are now able to constantly research through various channels to be up-to-date with their desired information. This remediation is now part of their daily lives. The rate at which these mediums have evolved is no doubt going to continue and the way in which individuals conduct their research will depend on the medium that best suits them. There exists a rapidly changing field of technology where users are beginning to reconfigure the device to better suit their specific needs; for example, more users utilize a Smartphone or tablet to research and develop an assignment, which highlights the activist nature of new media. The technological advances in devices designed to allow Internet access has made remediation common place, although South African students are still coming to terms with reconfiguration.

2.3.2 Understanding knowledge on the Internet: Commons knowledge versus increased individuation

One of the benefits of using "computer-mediated communication" is described by, French philosopher, Pierre Lévy as providing "people with the means to combine their mental forces in constructing intelligent communities and real-time democracies" (Lévy, 1997). Lévy, author of the book *Collective Intelligence: mankind's emerging world in cyberspace*, argues that the Internet is creating a vast, diverse but globally united information society, founded on the world wide collective intelligence being generated and stored on the Internet. The Internet as an information source has allowed individuals to create their own piece of writing and upload it onto the Internet for others to "compare notes, elaborate and refine theories" as they work together and collaborate their ideas (Jenkins, 2006a; 122). The production of knowledge is far more "powerful" in its collective form (Jenkins, 2006a; 140).

Commons knowledge has been described as the process in which ordinary individuals, as a result of the development of the Internet, are now able to share their various opinions and knowledge on a particular subject for others to view and respond to. Through the Internet, individuals have been granted increased access to add to various bodies of knowledge to

possibly enhance the quality of the commons knowledge; however individuals are forced to act as their own gatekeepers. Levy explains that within a knowledge community, “no one knows everything, everyone knows something, and all knowledge resides in humanity” (as quoted in Jenkins 2006a; 139). Therefore, interactivity encourages users to share their knowledge to create a shared pool of knowledge. Once accessed, this is knowledge everyone may have in common.

The idea of commons knowledge unfolds and develops as the notion of a collective intelligence is explored, complementing and enhancing each other. A collective intelligence is the compilation of individual commons knowledge. Commons knowledge is a powerful tool on the Internet as it groups all related ideas to form one “collective intelligence”, embodying important points (Jenkins, 2006c). Pierre Levy looks at the notion of a “shared knowledge” that is common to all, a “collective intelligence” (Jenkins, 2006a; 139). A collective intelligence is realised when individuals with the same common knowledge are able to share their ideas and develop a collective idea of the subject and broaden their “range of expertise” (Jenkins, 2006a; 139). It is better to have more than one opinion to strengthen the subject being written about. The great expansion and diversity of the Internet has allowed users the “freedom of choice” (Rice and Haythornthwaite, 2006; 96) as the “collective intelligence” of individuals creates something that is more “powerful than the sum of its parts”. Interactivity is vital to create a well-rounded information archive (Jenkins, 2006a; 140) as users are able to “compare notes, elaborate and refine theories through collaboration with other contributors” (Jenkins, 2006a; 122).

The Internet has been proposed as the first medium to honour “multiple intelligences” in one medium. This is not limited to texts, but to all forms of information and communication, so users interact with one medium to satisfy all their needs (Brown, 2002). One of the first striking factors when one encounters the Internet for the first time is the lack of one-way transmission. Focus is rather on the ways information is both pushed and pulled as a two-way process (Brown, 2002). John Brown explains the use and benefit of the Internet in a simple way, stating that what the Internet and Web does is “leverage the small efforts of the many with the large efforts of the few” (2002), so now all individuals, through interactivity, have a chance to add their knowledge. It is no longer just those in hierarchical powerful positions.

Many users offer diverse and important content for others to engage with, thus the "social capital" of the Internet in turn expands an individual's "social capital" especially as users become more confident in using the Internet (Warschauer, 2004; 157).

The Internet has harnessed this idea of a collective intelligence where all commons knowledge is stored. This form of New Media also gives its users the ability to produce, search and share content selectively. Individuals are able to interact with others in a way that was previously an "impractical" affair, to create an all-encompassing collective intelligence that accommodates all individual ideas and opinions (Lievrouw and Livingstone, 2006; 25). This information is created to suit all individuals as it is "easily altered" to get a collective representation of the contributors and obtain an abundance of information that has been garnered (Gane and Beer, 2008; 7).

This commons knowledge is developed as a result of interactive societies who are able to use the Internet as their portal for distributing their own knowledge. There is an on-going interaction between users and/or producers and the information they supply other individuals, making it seem acceptable for "information and communication systems" to merge into one, as well as be accessible via one network, the Internet (Gane and Beer, 2008; 40).

Most "bureaucratic hierarchies" have lost their ability to decide how information is to be produced and disseminated. This is as a result of individuals developing their own ideas and producing information where they feel institutions fall short (Jenkins, 2006a; 140). Users have been granted more control over information gathering, producing and dissemination, as this "control is being transferred from large institutions to individuals" (Rice and Haythornthwaite, 2006; 97). Via remediation much of the information on the Internet is now being written for common individuals by common individuals. Users feel drawn to the Internet as they are being offered a broader version of knowledge compared to previously. Removal of hierarchy constraints reduces the tight control and scrutiny. The networks constructed through the development of the Internet have transcended from the "hierarchical, one-way distribution configurations" that are associated with mass media production and

consumption (Lievrouw and Livingstone, 2006; 5) to embrace a development of commons knowledge.

The benefits of the Internet and commons knowledge play a pivotal role in the conscious decisions users make regarding where they obtain their information. Individuals tend to try and locate information that is easy to understand and find. Knowledge comes from organising "facts or ideas" into a form that is easily available and presented to audiences, offering a "reasoned judgement" through various communication networks (Gane and Beer, 2008; 46). The emergence of many different networks and "new media archives" has made it easy for individuals to access information and various elements of commons knowledge (Gane and Beer, 2008; 11).

There are however, many reasons why individuals may be sceptical regarding the use and encouragement of commons knowledge through the interactivity of the Internet. The Internet has no boundaries to the quantity of information that can be created and uploaded and as such there is a "diversity of content and sources now available" (Lievrouw and Livingstone, 2006; 25). Understandably, the expansion of information raises many concerns about the "quality of the content" and the reliability of that information available (Lievrouw and Livingstone, 2006; 25). Concerns are further amplified as digital technologies and the advancements with the Internet make the inaccurate "manipulation of data" an easy process, as information is "easily altered" by either the author or other individuals (Gane and Beer, 2008; 7).

Commons knowledge has led to the progression of the Internet from being an archive for the dominant ideologies to one that is "increasingly *individualized"* (Gane and Beer, 2008; 11). Commons knowledge presents the individual the task of being their own "gatekeeper" (Gane and Beer, 2008; 11). Hackett and Carroll explain that by individuals becoming responsible for producing work, they are forced to produce work they deem fit for others to use, as they are communicating "directly with the broader public" (2006; 47). It is argued that the Internet simultaneously produces commons knowledge as well as increases individuality. This necessarily relies on the ethics of the contributor to only add what is accurate and of value.

The notion of commons knowledge extends further as individual publications are "immediately and widely available" to all users (Borgman, 2007; 101).

Nancy Dixon argues that there is "little personal benefit" to contributing to the Internet or any other online database as there are no gratifications available, other than the satisfaction of knowing one contributed to form a whole common knowledge (2000). The team of authors work the same, perform tasks and develop ideas that answer the holistic question or the intention of the article; this basic structure of an information piece is then built on and used as leverage to be enhanced until all parties are satisfied that a common knowledge has been gained and the work is of the highest level (2000).

Collective intelligence has many factors which help to enhance the overall attractiveness of the Internet as a research tool. Adding value and content takes time and effort and as a result O'Reilly explains that only a few will "go to the trouble of adding value" to the body of knowledge (O'Reilly, 2005; 30). Some articles are developed and stored in "proprietary databases" which are protected (Borgman, 2007; 90-91). Livingstone explains that users have to be their own regulators or critics, and she offers cautions to activist or citizen's media, where users feel they should be contributing to the body of knowledge; she believes this should not necessarily be encouraged for students at University. Most information and "scholarly data" that is generated is done in an "interconnected rather than independent" manner to increase its value, as Borgman considers the more contributions there are the more rounded the piece of work; is in this way even scholarly publishing which cannot be adapted remains in the realm of commons knowledge (2007; 10). However, it has been acknowledged that having too many different options to "select from and too much information to sift through can make it harder to find the information we are after" as a result of the information being incredibly diverse and constantly changing (Okin, 2005; 146). Information is always assumed to be either known (given) or unknown (new) to the audience and the authors need to be aware and understand that not all their information will be accepted in the intended manner; and due to interactivity they need to be open to others contributing new information to the common body of knowledge. It will be up to the person accessing the information to determine its merit, either by further research on other sites covering the same topic or previous experience with the authors leading to trust in their accuracy and authenticity.

As more individuals are adopting the use of the Internet, an increased number of users are embracing the advantages of commons knowledge, thus the information spaces need to develop and advance in accordance. “Digital libraries are constructed, collected and organized by [and for] a community of users” making them specific for the “needs and uses” of that particular audience. This explains why it is appropriate that the content be written by them as well (Borgman, 2007; 18). Scholarly publishing, in the traditional sense of the process, goes through many stages before being available to the public. The Internet and the speed at which individuals are able to upload information has revolutionised “scholarly publishing” (Borgman, 2007; 76). In terms of “scholarly publishing”, many students use more accessible websites, as they prefer sites devoted to the expansion of commons knowledge. They avoid the often highly specialised sites which do not allow for the same degree of interactivity as they are designed more specifically for the retrieval of information.

2.3.3 Students as Interactive Users

When utilising the Internet for their researching purposes, students have the freedom to explore the vast database of information. Students are semi-interactive in their uses, as they use what is easily available for a vast number of reasons. Students as a general overview are semi-interactive users in the ways they conduct their research and are seen to favour the notion of commons knowledge as it is easier to understand and use than more academic articles. Hence, the idea of students being semi-interactive by accessing more straightforward arguments, as opposed to being fully interactive by also contributing to commons knowledge.

The Internet and digital media alike have offered users an opportunity to control information input and output. The levels of interactivity are determined by expertise and confidence in navigating and using the new technologies as students choose to show preference for specific pieces of material (Gane and Beer, 2008, 100). The Internet is complex and although possibly easier to scan and search through compared to a physical library, where the information may be complex and confusing. Students need to be aware of this and acquaint themselves with the Internet to effectively use it as a research tool.

Students are able to interact and communicate actively and freely online in order to develop well rounded information (Hackett and Carroll, 2006; 84-85). All individuals have different frames of reference when incorporating their ideas into a piece of writing and as a result there are many differing opinions and ideas that would suit only like-minded users. Not all texts are encoded for users to decode in the exact same manner. Each individual's needs are different, as they have their own unique agency (Lister et al, 2003). Students must make conscious decisions as to where they are to find their information, as well as what information they use. Students may not fully understand an article but merely take from it the brief overview without fully understanding and comprehending the work in its entirety.

The technological advances in the material artefacts associated with the use of the Internet have allowed individuals more opportunities to "discover, retrieve, and read more scholarly content" than they possibly would if they were to consult traditional printed texts (Borgman, 2007; 77). Users look to the Internet as their go-to "information and communication environment" where they are able to use what is available to them and create their own understanding by drawing on varied and diverse texts (Lievrouw and Livingstone, 2006; 1). Users are encouraged to always act with individual agency when deciding what information is reliable and valid; the students need to act with agency.

Livingstone acknowledges there is scepticism regarding the use of the Internet as the "freedom of the Internet can be unhelpful" as anyone is able to upload information, whether they are familiar with the topic or not (2002; 214) Livingstone feels the library to be "more reliable" for students at University if they are unable to decipher what is valid and reliable (2002; 214). Livingstone is not necessarily for or against the Internet, but rather feels that students need to be cautioned when using it as a resource and should be more critical of the information than they would be if they were to use a traditional resource, such as a book or journal.

Ideally, students in a tertiary institution are active in their use of the Internet. In the process of collecting information, they become aware of what is available while researching. Livingstone argues that students feel that the progression from institutionalised contexts of

learning to an individualised way of learning is more beneficial. Students feel they learn more through the process of "learning by doing" and at their own pace (Livingstone, 2002; 237). In order for students to decipher what is useful to their research they should be aware of the active nature of new media and the increased individualisation it allows. Due to the activist nature of the media, regulation is done at a personal level as control by institutions is increasingly difficult due to the great expansion of information. It is ultimately the individual who is held accountable for what is taken from the Internet as a resource.

Students need to be equipped to discern useful from useless, to appreciate the need for cross referencing and critical appraisal of information. Due to ease of access there is no reason why more sites cannot be visited to verify and expand research.

2.4 Institutional Organisation

There are procedures and steps to follow when researching online. Whether these guidelines come from lecturers, librarians, the institution or peers they are to users as labelled, guidelines. In her description of new media, Lievrouw also indicates that it is important for us to understand the "social and organizational arrangements" that shape the retrieval of information which, in this case, would be the academic environment of the University (2011; 15). The Internet is a useful and convenient researching tool. Reservations regarding its use for academic purposes arise from one being able to either develop or download information.

2.4.1 The University as a structured information environment

Specific criteria are set by the University, a tertiary academic institution, as to the specific degree structure and the curricula. Likewise there are various lecturer demands. Students, on the other hand, through the development of individual online practices, typically have their own sense of what is appropriate, useful and reliable. This raises the question of how the individual agency, promoted by the interactive Internet, can be reconciled with the external criteria, set both by the University and the individual lecturers responsible for assessing student work. There appears to be a distinct tension between the lecturers, in their role of

enforcing proper research practices, and the students who seem to have a vast freedom to access various resources. This leads to differences with regard to what each party identifies as correct research procedures.

In the traditional University, an information exchange took place between students, lecturers and the library in general; as well as in the form of materials, that lecturers place on academic reserve. In the age of the Internet however, users are obtaining their information through their own efforts and through multiple channels – an approach which strongly encourages them to assert their individual agency and to "think independently" (Prinsloo, 2003; 64). This is especially true when separating the "relevant information from non-relevant information" (2003; 62) to increase independent learning as described by Prinsloo. Lecturers on the other hand strategically plan their lessons around specific topics they wish to cover and structure the course and the work to be taught carefully. This is to ensure the time spent with the students is as informative as possible for that particular period; unlike the Internet where students have to find the useful information themselves.

2.4.2 Student/lecturer tensions in the use of online materials

Regardless of the benefits derived from the Internet, there are issues that confront not only students, but librarians and academics alike (Limb, 2002). Tension may arise if students do not equip themselves with the knowledge to research properly, resulting in work that has not been carefully verified and cross referenced. Accurate information, derived from the vast array of knowledge, and easy access to the Internet should ensure students presenting facts from a variety of sources are able to do so in a cohesive manner, without deliberately committing plagiarism. Many students are using the Internet, navigating through the online realm to find their information, leading lecturers to raise questions regarding Internet usage. The argument concerning the students' use of the Internet is noted simultaneously with concerns by academics of ethics and plagiarism. Plagiarism is explained as the "representation of someone else's words, ideas, or data as [their] own" (University of Oregon, 2006). These dilemmas are focused around the reliability of articles and who authored them, as students use them for research. The information explosion, or as Limb describes the Internet as "information overkill", explains the ever growing amount of

information online which will only continue to increase (2002). Lecturers need to be aware of the use of the Internet and the abundance of information available to students; Prinsloo explains that lecturers should be attempting to monitor the use and possible misuse of information (2003). Plagiarism continues to be problematic for lecturers, while the information explosion makes it challenging for students to navigate the Internet properly. These two factors can lead to tension between lecturers and students.

In a study conducted at York University, Marlene Scardamalia found that passing more responsibility over to the students was most beneficial, as they communally enter their ideas into a database. They are thus able to engage in a "reflective activity" for those willing to contribute to adding to the body of knowledge, not just at their University but abroad as well (2002; 73). This process that Scardamalia speaks of is similar to Moodle, a collective and collaborative software available to UKZNP. However, this research focused on individualised access, collecting information from the World Wide Web instead of using the Internet as a classroom tool. Nonetheless, this is an idealistic approach which is very difficult to not only monitor and control, but to maintain. There are many online sites about which users, mainly academics such as lecturers, remain sceptical due to the lack of control and reliability of quality. The institution needs the researcher to access reliable and relevant factual information at every opportunity.

With regard to opposition by academics, plagiarism continues to be an ever increasing contested issue within many Universities as students are able to access the online databases so readily. Indiana University "recognizes that the Internet and World Wide Web have made plagiarism easier for students who would rather take the easy way out or who don't know any better" (2004). It has been a common complaint that students have been found to favour the copy-and-paste technique when they use the Internet as opposed to citing the information as not being their own, thus the necessity for all the regulations in place. This is a serious offence resulting in disciplinary hearings. There are programs in place to try and limit or decrease the amount of plagiarism such as *Turnitin*. *Turnitin* scans the assignment or article for any work that is not quoted and belonging to another individual; the student gets a rating out of 100 as to the authenticity of the assignment and is marked accordingly. These programs are costly and time consuming especially for lecturers who do not have available

the time or resources, having to rely on their own judgement and experience to determine legitimacy.

Lecturers have to find a more reliable way of allowing access to Internet use for research and assignments as the future is bound to be more technologically oriented. Students need to be better equipped with the skills to enable them to make critical judgements and evaluations of the validity of the relevant references.

Chapter 3: Methodology

3.1 Introduction

This research project is a qualitative investigation into the use of the Internet in a tertiary academic environment. It is made up of three parts: firstly a questionnaire for senior undergraduate students; secondly, in-depth interviews with the sample coming from the students who completed the initial questionnaire; and, finally, electronic interviews with a number of academic staff.

The choice of the institution in which to locate the study – the Pietermaritzburg campus of the University of KwaZulu-Natal (UKZNP) – was both purposive and convenient. It was the latter because it is my home institution and thus brought with it the advantage of prior knowledge, established contacts and convenient location. The choice was also suited to the purpose of my research for the following reasons. A tertiary institution was appropriate since the students in my study needed to be familiar with relatively advanced independent research. In addition, UKZNP seemed a promising environment in which to contact a wide range of students who come from different backgrounds and who would, therefore, have had differential access to online information.

In addition to the above reasons, UKZNP was chosen because of its emphasis on research and its widely differing student body. According to its website (www.ukzn.ac.za) its vision is to be the "Premier University of African Scholarship" and to grow its reputation for "academic excellence" at all levels. UKZNP prides itself on being one of only three South African universities in the top 500 in the world (UKZN website). The motto of the university is **"**Every Student Matters" regardless of their background and diversity. The mission amongst other things looks to be engaged with society and to be "demographically representative, redressing the disadvantages, inequities and imbalances of the past" (UKZN website). The principles and core values are to "support and contribute to national and regional development, and the welfare and upliftment of the wider community" through the sharing of knowledge (UKZN website).

3.2 Qualitative Research

This study is fundamentally qualitative and uses qualitative techniques at "both the data collection and data analysis stages" (Cooper and Schindler, 2006; 214). It understands qualitative research as a method which deploys an array of interpretive techniques seeking to "describe, decode, translate, and otherwise come to terms with" how the participants, in my case students, understand their engagement with the Internet for their academic research (Cooper and Schindler, 2006; 2214). The three methods used in this particular study are outlined below.

Groves et al (2009) offer a process perspective on the designing and implementing of survey questionnaires and this research follows the steps that they recommend as shown in Figure 1 below.

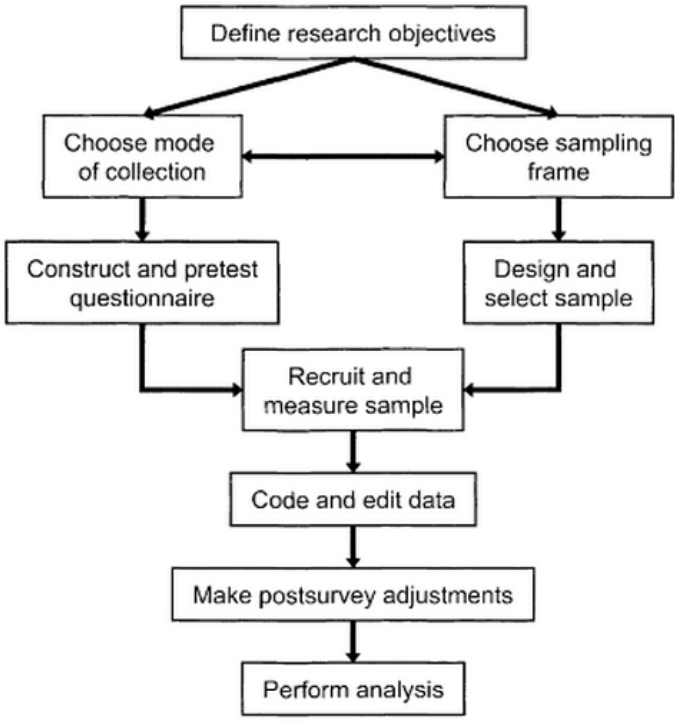

Figure 1: Conducting a survey from a process perspective. (Groves et al, 2009; 47)

As at the beginning of any research, the research objectives for this project were defined before the planning and gathering of information. My primary aim in this research was to determine how students use the Internet for their academic work. The sampling frame chosen

for the project was senior undergraduate students in the Faculty of Humanities and Social Sciences, because my experience has shown that they are required to engage in independent research. In addition I made the decision to focus on senior, third year, undergraduate students because they were likely to have had the most experience doing research (third year is the final year of a Bachelor of Arts and Bachelor of Social Science degrees).

3.2.1 Questionnaires

Initially, a pilot questionnaire was handed out to ten (10) targeted students to gauge if the questions asked were easy to understand and if the answers received were likely to prove useful. The question wording was very important and simple language was chosen to aid in the ease of understanding and overall effective response. The questions were answered in a satisfactory way and no significant changes were made. However, some adjustments to the layout were made to make the questions or questionnaire quicker and easier to complete (See appendix A).

For the questionnaire proper, my aim was to gather one hundred (100) responses. In order to do this I distributed one hundred and ten (110) questionnaires. Opportunistic, convenience-based sampling was used in which one hundred and ten (110) "readily available" (Cooper and Schindler, 2006: 222) students were surveyed. To ensure the students were studying the desired subjects, I made appropriate arrangements with the lecturers concerned and then went to the relevant lecture venues. Before the lecture these targeted students were all asked to fill in a basic questionnaire to gauge how they use the Internet for their academic work; some lecturers gave me an additional five (5) minutes at the beginning of their lectures to complete the survey. Students who completed the questionnaire were also asked to indicate if they were prepared to later participate in the in-depth interviews should they be able to offer their time to the study.

The factors taken into account when designing and distributing the questionnaires were two-fold. Firstly, non-response was a concern: many students may not necessarily be interested or motivated enough to fill the questionnaire out thoroughly. The second factor was response

error. This occurs when the participant "fails to give a correct or complete answer" (Cooper and Schindler, 2006: 297). One concern was that some students would not fully complete forms; hence, I increased the desired sample size by 10%. In the event, when the questionnaires were batched I found ten (10) that would add no value to the research as many of their answers were incomplete; a few others failed to answer all questions comprehensively but were still suitable for analysis. Thus the additional ten (10) questionnaires were required giving me one hundred (100) responses to analyse. Questionnaires were excluded solely on the basis of whether all the questions had been answered and not on the content of the individual answers.

The questionnaire began with five demographic questions including what their majors are, where they live and whether or not they had experience with the Internet. Many of the subsequent questions focused on their current use of the Internet as well as any courses they have taken to aid in the use and understanding of computers and the Internet. Most of the questions required students to tick boxes or write short answers where appropriate (See appendix B for questionnaire).

3.2.2 In-Depth Interviews with Students

Of the students surveyed, twenty one (21) indicated that they would be willing to participate in interviews, but in the event only fifteen (15) of these made themselves available. My initial intention was to divide the sample equally between students living on and off campus because that was a factor most likely to influence their having differential access to the Internet. Unfortunately, however, only two (2) of the fifteen (15) interviewees lived on campus. In addition, I made a concerted effort to represent all race groups as well as both genders, but was ultimately constrained by the make-up of the group of students who had indicated that they were willing to be interviewed.

An in-depth interview is "an extensive, one-on-one, objective-driven, orchestrated conversation between researcher and participant" (Cooper and Schindler, 2006: 226). The interviews looked to extend and probe the responses to the answers obtained from the

questionnaires and use this information to develop an argument regarding the students' uses of the Internet for their academic work. An advantage to using one-on-one interviews as opposed to group discussions is that some individuals may dominate while others may withdraw and not contribute to the discussion. Individual interviews allowed for more open dialog between the interviewer and each participant in a private or relatively private environment. In addition, in-depth interviews offer a deeper exploration within qualitative research and are often beneficial to one's efforts to obtain views and opinions in a one-on-one setting to probe and discuss ideas in an informal way, rather than a student not answering all questions for fear of judgement. An interview may be regarded as a more open setting to ask more in-depth questions or triggering a related interesting thought or question; making certain the students are understood and their opinion and views elaborated effectively. Qualitative research methods aim to go beyond numerical assessments of the data (Priest, 1996; 5). The interviewer is expected to analyse and extend what is said through further questioning, as well as to pay attention to the body language and other aspects of the interviewees' responses. My topic of research was not a particularly emotional one and I found that I had little need to pay attention to the body language of the interviewees.

Before each interview commenced the student was briefed on the research project as a whole and informed that they were free to leave at any point in the interviewing process. The same basic questions are asked of all students to gain an overall impression of the differences, if any, between their uses of the Internet. The initial, standard questions that were set were asked in the same way. They had been carefully worded in order to limit the variance and misunderstanding that might occur if the initial questions were produced spontaneously (Refer to appendix C). Groves et al (2009:305-6) explain that this is the most "fundamental and universal" principle in standardized interviewing as it ensures that all participants have the same initial knowledge of the process and project. Once an interview topic was under discussion, however, I felt free to ask more probing questions arising directly out of the initial responses or in order to clarify what had been said. All of the in-depth interviews were recorded for reference purposes (Refer to CD, appendix D attached). Every effort was made to ensure that the interview environment was relaxed and comfortable and that the participants felt that it was a free space in which to converse without fear of prejudicial judgement.

3.2.3 Interviews with Lecturers

While the primary aim of this project was to determine how students use the Internet for study purposes, it however seemed sensible to include the views of other key participants in an academic environment directly concerned with the learning process and for this reason I decided to conduct additional interviews with members of the academic staff responsible for the learning process and a subject librarian. This secondary phase in my research was conducted because the academic staff are ultimately the overall assessors of the work researched and produced and often give guidelines about the use of the Internet. In retrospect the opinions of the academic staff proved invaluable to my overall analysis and in constructing recommendations for best practice.

Once the student information had been obtained and analysed, a number of lecturers were approached and asked to participate. Many, however, declined due to time pressures. I was able to obtain agreement from six lecturers and a subject librarian. The six lecturers who agreed to participate were from the same subjects in which the students were majoring, namely: Ethics, Politics, Information Studies, Psychology and two from Media and Cultural Studies. The subject librarian was responsible for most of the Humanities disciplines.

I personally met with all these participants and gave them a verbal explanation of my research project as well as a brief account of what I had so far gathered about student attitudes to Internet research. These staff members unanimously indicated that they would prefer to participate using an e-mail questionnaire, to which they could respond at whatever time they found convenient. I therefore e-mailed them a set of questions, prefaced by a brief explanation of what I had gathered from student responses. This process proved more flexible and, although the lecturers agreed to answer further questions, I found their initial responses were adequate to my needs (refer to appendix E for the set of lecturer questions). One may argue that there were disadvantages, such as not being able to see a lecturer's physical responses or probe more deeply; however I felt that in this particular research it was not necessary for a personal interview.

3.3 Ethical Considerations

There were two key ethical matters that needed careful consideration in this research project. The first was the question of confidentiality or anonymity of the participants. The second factor was to ensure that the entire research process was non-coercive; making the participants aware they were able to be excluded from the research at any point.

The issue of confidentiality and anonymity seemed to be of most concern to the participants and care was taken to explain this at the beginning of all the research activities I engaged in. Confidentiality was assured in the following ways. All the students were asked to sign an attached agreement in which I indicated that it was not necessary to write their names on the forms and that I would not use their names in my research, the same process was followed in the interview stage. The students were told that their real identity would remain undisclosed and that in all cases pseudonyms would be used when discussing their particular responses. The participants were encouraged to be honest, even though being recorded, and I stressed my aim was to achieve a sympathetic "in-depth understanding" (Cooper and Schindler, 2006: 214) of their views. The lecturers who were interviewed also remained anonymous and were only identified by the subject they were responsible for in order to record any differences there might be in their approaches.

For technical reasons the student interviews were recorded using a video camera but the camera was pointed away from the participants and only the soundtrack downloaded and written to a disk. The disk with the interviews will be stored in the School of Arts along with the notes made in the interviews for a period of no less than five (5) years.

The second important issue was to ensure that the non-coercive nature of the process was achieved; this was done in the following way. Each of the participants was made aware throughout the process that they were able to exit from the study at any point if they felt uncomfortable. No intimate or potentially offensive questions were asked of any participant. All participants were briefed and debriefed and any participants wishing to know the results

are able to request these. They are however unable to see original transcripts as these have been kept confidential and will be destroyed upon completion of the project.

The lecturers were given the same assurance of confidentiality and that names would not be used, only subject areas. From the beginning of the interaction with lecturers they were informed that should they not wish to participate or feel they are unable to commit any further, they were able to leave the study. The reply from each lecturer was printed and, like the questionnaires, will be stored with the School of Arts for five (5) years and then destroyed.

Finally, the research proposal and instruments used were submitted to the University higher degrees and ethics committee before the project was set in motion.

Chapter 4: Data Analysis: The Survey

4.1 Introduction

The accessibility and interactivity of the Internet has resulted in more information being uploaded by ordinary individuals, as they share their common knowledge. The Internet has developed into an interactive and collaborative source offering an abundance of information to a much wider audience whose levels of education and intellectual sophistication are considerably varied. It is this that makes the Internet an attractive source, especially to students. But it is for precisely the same reasons that many academics are wary of the Internet; for them it holds as many dangers as it offers advantages, especially in an environment whose key aim is the generating and imparting of knowledge rather than the exchange of information. Knowledge is contributed by people with personal understanding of the subject matter, while information is simply a collection of facts.

I began my research by attempting to establish a general picture of Internet usage amongst students on campus. This survey had two goals. Firstly, I attempted to establish a demographic picture of the students including their current access to the Internet and an understanding of their pre-university experience of online activities. Secondly I needed to establish an overall understanding of the uses as access to the Internet was uneven and so social inequalities (in terms of relative wealth, privilege and schooling) meant that material technologies were not equally available to all students.

4.2 Demographics

4.2.1 Student residence

Students were asked to complete a questionnaire which included a few logistical questions in order to gain a sense of where they used the Internet and how much effort they needed to expend in order to achieve this access. Where students live and where they access the Internet will undoubtedly play a role in their research practices, with some students being placed at a greater disadvantage than others. For example, having access to the Internet at home is a considerable advantage when using online resources, as it is much more readily available.

Such students are able to research up until the last moment without having to find an available computer in the University LAN or at an Internet café. (Free wireless access, which makes online research even easier, was not generally available at the time that this research was done but it has since become much more readily available to students on campus).

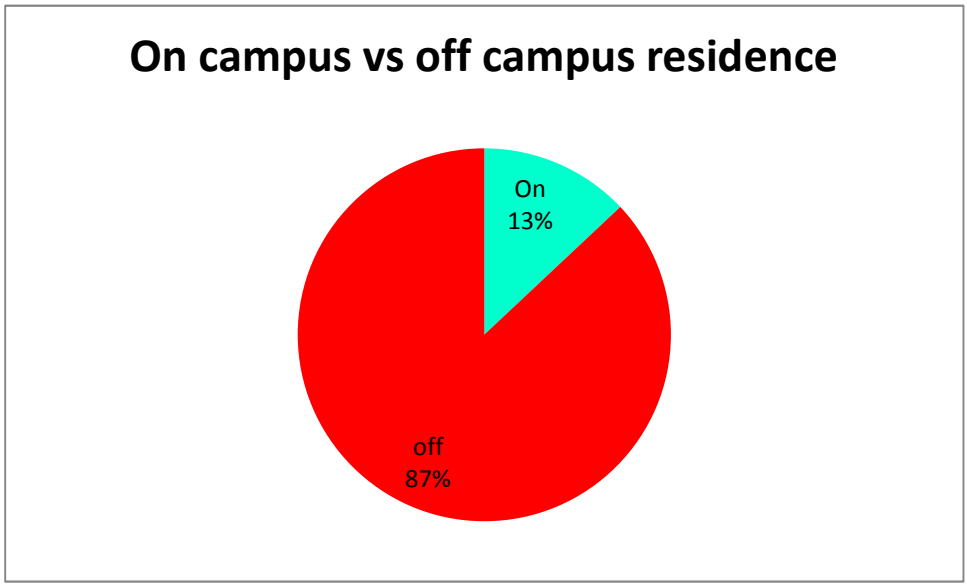

Figure 1

Of the 100 students returning surveys, 87 lived off-campus, whether it was at home or in a digs with other students (see figure 1). The remaining 13 students surveyed live on campus and, therefore, have relatively immediate access to the Internet (and the library). However, such students would always need to walk a short distance to a LAN except, of course, in the unlikely situation that they were able to afford a personal 3G data account. This question highlighted the fact that while the Internet has the ability to provide universal access, such access is always dependent on the students' places of residence and whether they could afford personal access, whether at home or on campus.

4.2.2 Student majors

The students surveyed were all registered in the Faculty of Humanities and Social Sciences. Within the faculty there are many subject options available but, typically, students are expected to choose two majors, some of which are located outside the faculty. Students were asked to identify their two chosen majors. The aim of this question was to determine which subjects the students were from in order to check for disciplinary differences and to co-ordinate these findings with lecturer opinions that would be addressed later on in the research. The total number of majors listed by students below totaled 186 instead of 200 as not all the students listed all of their majors or failed to fully complete the question. The results are presented in Figure 2 and it is interesting to note that Media has the highest number of students when, in fact, Psychology is the most popular major offered in the College of Humanities. This anomaly can be explained by the fact that my access to students was variable and, while there is a reasonable spread of majors, the sample has been partly shaped by the fact that the Media Department were more accommodating to the questioning of students during their lecture times.

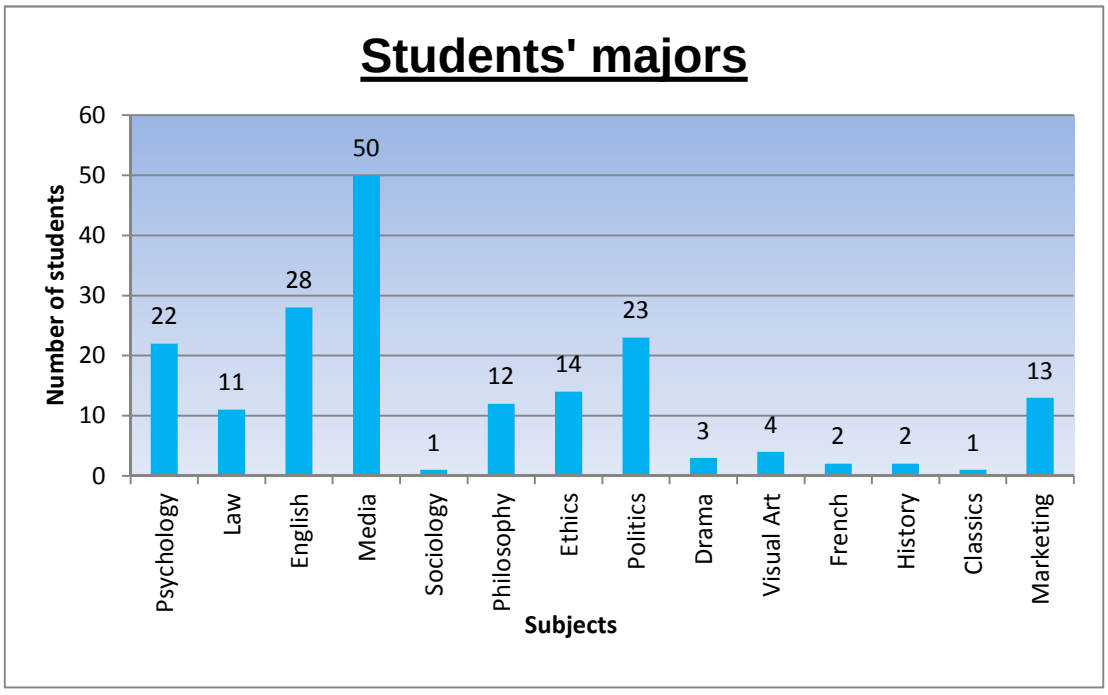

Figure 2

4.2.3 Research preferences: Medium & Location

Academics at the University require that students engage in individual research when they are given an assignment to complete and often do not specify whether they may source their information from the Internet, library or text books. As the chart below makes clear, most students (98%) use the Internet for researching and very few avoid it entirely. Presumably, this 2% use the on-campus library, lectures and text books as their only resources (see Figure 3 below).

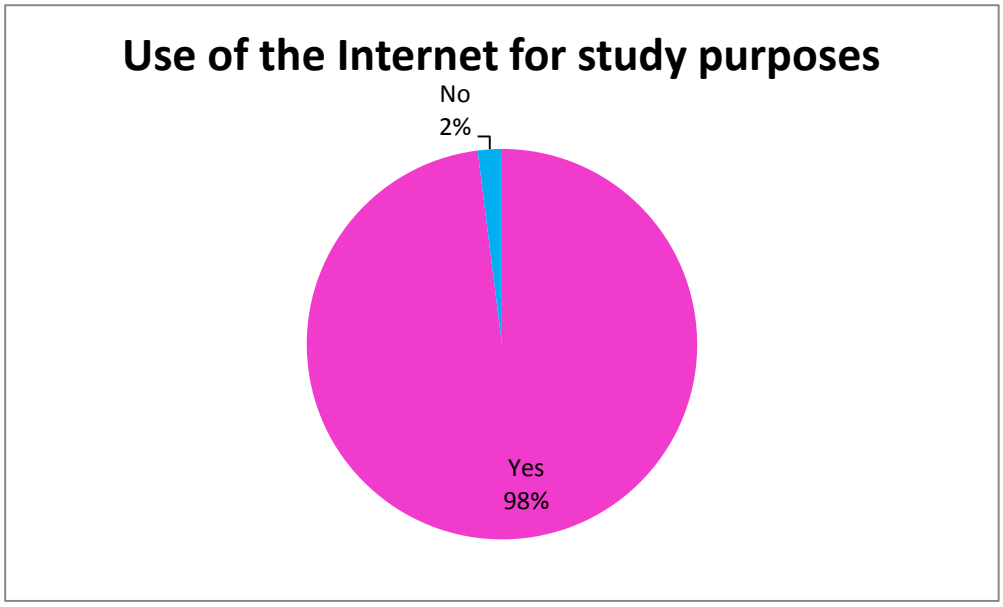

Figure 3

Despite Internet access being freely available to students on campus, at least half of the students surveyed indicated that they do not use the LANs but access the Internet elsewhere. Students were asked where they go "to use the computer and access the Internet" in order to gain a sense of how much effort needs to be made when trying to access the Internet. Out of the 100 students questioned approximately half of the students gave more than one location as to where they access the Internet, as the number of responses totaled 152. Just under half (49%) answered that they use the University LANs or library computers to gain their information while they are on-campus, attending lectures. This allows them to utilize what spare time they have to stay up-to-date with work (see figure 4 below).

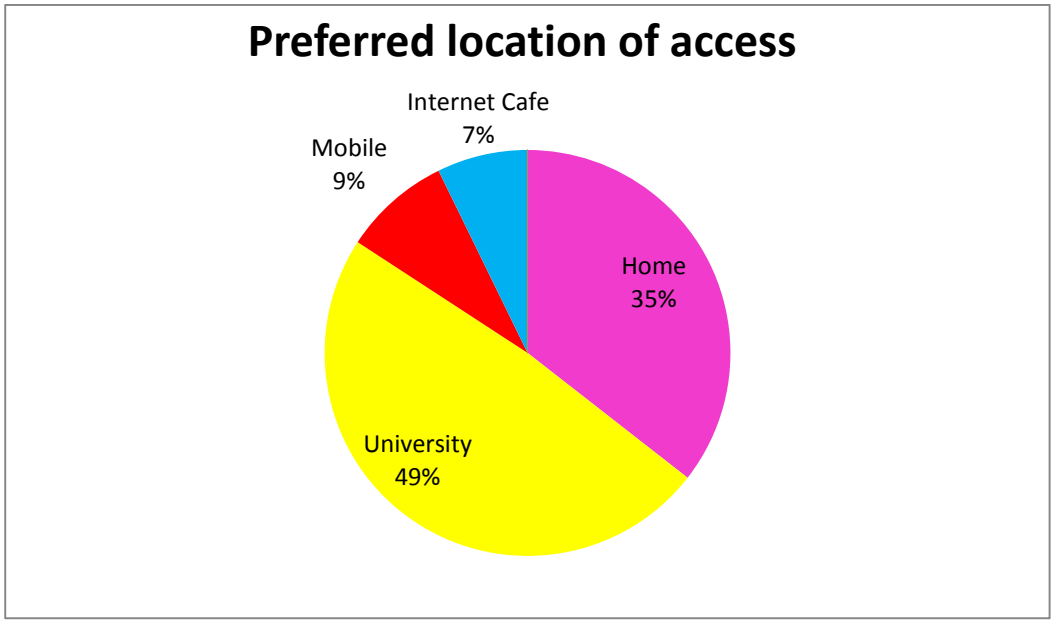

Figure 4

There are only a few alternatives where students are able to spend extended periods of time online, working and accessing information. It seems that the most common alternative for students is to find access at home, or elsewhere off-campus. Many students accessed the Internet both on and off-campus depending on the convenience of where they were; 35% of the students, at the time, were able to access the Internet at home.

Students are able to access the Internet and retrieve information in a multitude of ways, one of which is through the mobility of the Internet. Of the students surveyed 9% noted that they accessed the Internet through their cell phones as they have constant access, however this seemed to be a personal preference dependent upon available time, whether they had a laptop, access at home or computer availability at the LANs. There were a few students (7%) who found that paying to use an Internet café's access was for them more convenient than going to University. The possible factors that could affect this decision are the distance one needs to travel to University, as not all students live at an easy distance from the University, or the non-availability of the computers on-campus.

4.3 Prior Experience and On-Campus Training

4.3.1 Past practice

South African students typically come from diverse cultural and economic backgrounds. Many students come to University with little or no experience of computers and the Internet. In addition, many face language barriers since their home language is not English, which is the dominant language of the Internet (Internetworldstats, 2013).

The survey revealed students entering University had had some interaction with computers, however not all students were fortunate enough to have experience with the Internet prior to entering University. Of the 100 students surveyed, 84 of the students had prior experience with the Internet whilst 16 students had not had any experience with the Internet (see Figure 5).

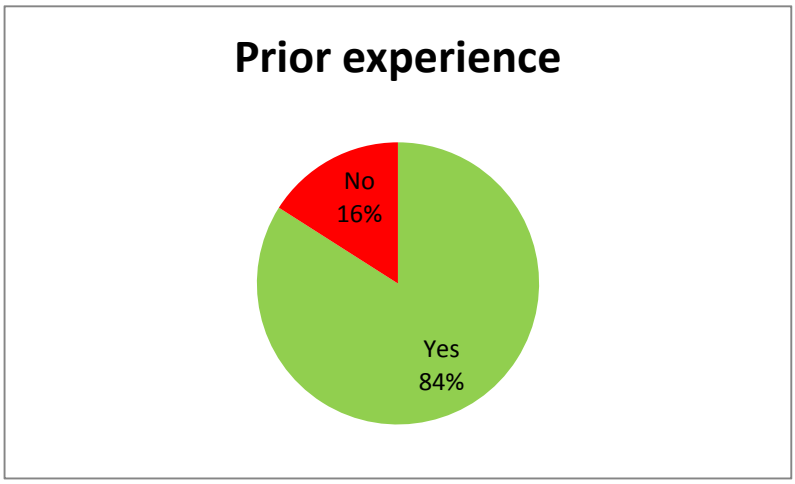

Figure 5

Those students who answered in the affirmative were then asked a secondary question of where they had obtained this experience (see Figure 6). Some students (38%) explained that they had access to the Internet at school where computers were integrated into the learning program. Most of the students (41%) were fortunate enough to be able to access the Internet from a computer at home, where they were able to further their expertise and experience as well as explore the web independently. Other students who did not have constant access (or possibly had access at school and not at home) would find alternative venues (21%) to go online whether for general browsing or for a specific assignment or task. These

supplementary venues included: museums, town libraries or their parents' workplaces. Thus it can be seen the uses of the Internet and the abilities of the users were vastly varied as each student had differential access as well as specific reasons for accessing the Internet. It was more for entertainment purposes than researching prior to entering University.

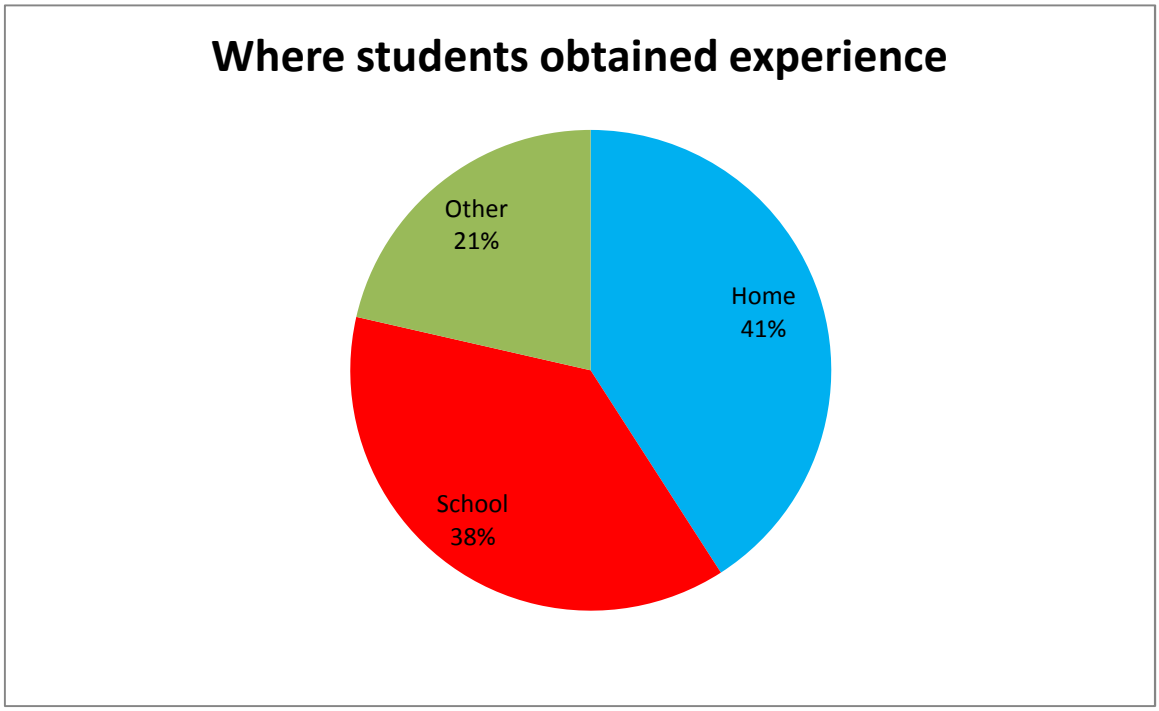

Figure 6

4.3.2 Completion of a computer literacy course

Many students enter University having only a very basic (or sometimes even no) knowledge of how to use a computer and/or the Internet. Either they learn the basics of Microsoft Office at school and how to use e-mail and Google or they experiment at home to determine how to use the software. As a result of this very basic understanding, many students consider it beneficial to take a computer course in first year at University to improve their skills. Students were asked if they had completed a computer literacy course, and if they answered in the affirmative, they were asked to specify which course in a secondary question. Most of the students (70%) replied that they had done a basic computer literacy course upon beginning their University career, possibly to make certain they knew how to use the technologies the University had to offer, as well as to gain degree credits in a practical way. The remainder of the students (30%) who did not do a computer course were likely more

confident in their ability to use a computer and the technology available to research online, as well as how to use the resources available at the University such as specific software and online databases (see Figure 7). None of the courses offered at University, outside the limited scope of the library orientation seminars, offer students any training on how to use the online academic databases or to integrate such material into their general research or learning. This is, perhaps, surprising since accessing online databases is a fairly convoluted process.

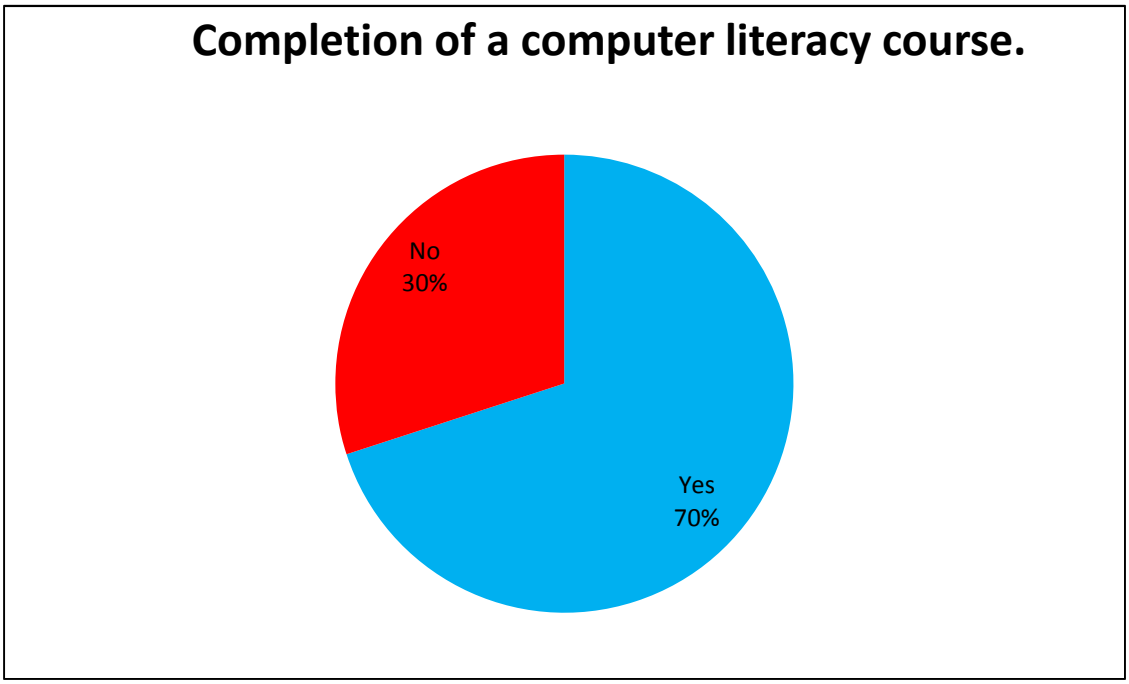

Figure 7

Of the courses taken by students, the most common course was ISTN 100 which 62% of the students took upon entering University. This course has no prerequisites and its aim is to emphasize the use of computers as "integrated tools and [to] introduce end-user computing definitions and concepts" (College of Law and Management Handbook, 2013; 176). The intention of this course, as described in the handbook, is as a basic introductory course to computer hardware and software (ISTN handbook, 2010; 1 [Appendix G]).

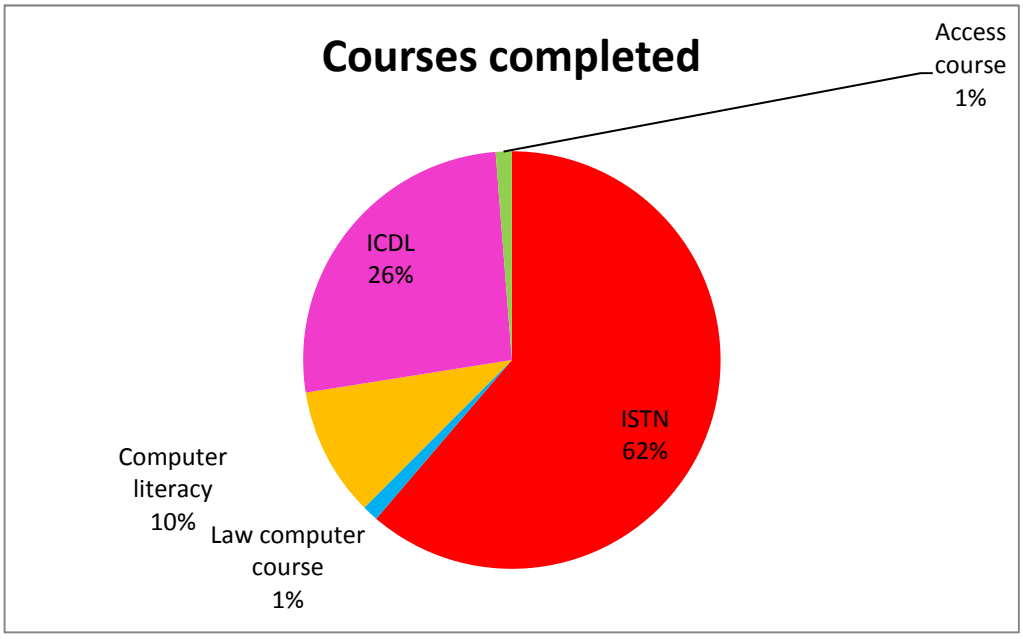

Figure 8

The survey also included results for ICDL (International Computer Driving License). ICDL is a fairly popular extra-curricular computer course which is offered at some schools, where each pupil works towards the certificate. The goal of ICDL is to become familiar with computers and the Internet from an entry or beginner level; its aim is to "enable proficient use of ICT [information and communications technology] that empowers individuals" who choose to enroll in the course (ICDL Website). There are additional computer oriented courses such as computer literacy courses (which teach students the basics of using a computer), student access courses, and the faculty of Law computer courses which made up the final 12%. But these were clearly not as popular as the others, as they were possibly more subject specific (see Figure 8).

4.4. General use of the Internet

In order to obtain a general picture of their Internet usage, the students were asked to indicate the kinds of online activities in which they engaged. Students were able to list more than one activity and the total number of online activities engaged in by my sample was 212. The most common activity (46%) was to use the Internet for learning purposes (see Figure 9). Social networking was the next highest purpose for which they used the Internet, such as maintaining contact with friends. The uses included (with percentages) social networking (Facebook, YouTube etc) (20%), e-mailing (8%), downloading (films, TV series) (3%), general entertainment such as music and gaming (15%), general browsing of the Internet

(4%) and news (4%). It is important to note, however, that since the survey was distributed and tabled (at the end of 2011) these results have in all likelihood changed a significant amount, and while this is not a significant problem it is interesting to note and be aware that the current usage profile probably differs, particularly with regard to social media.

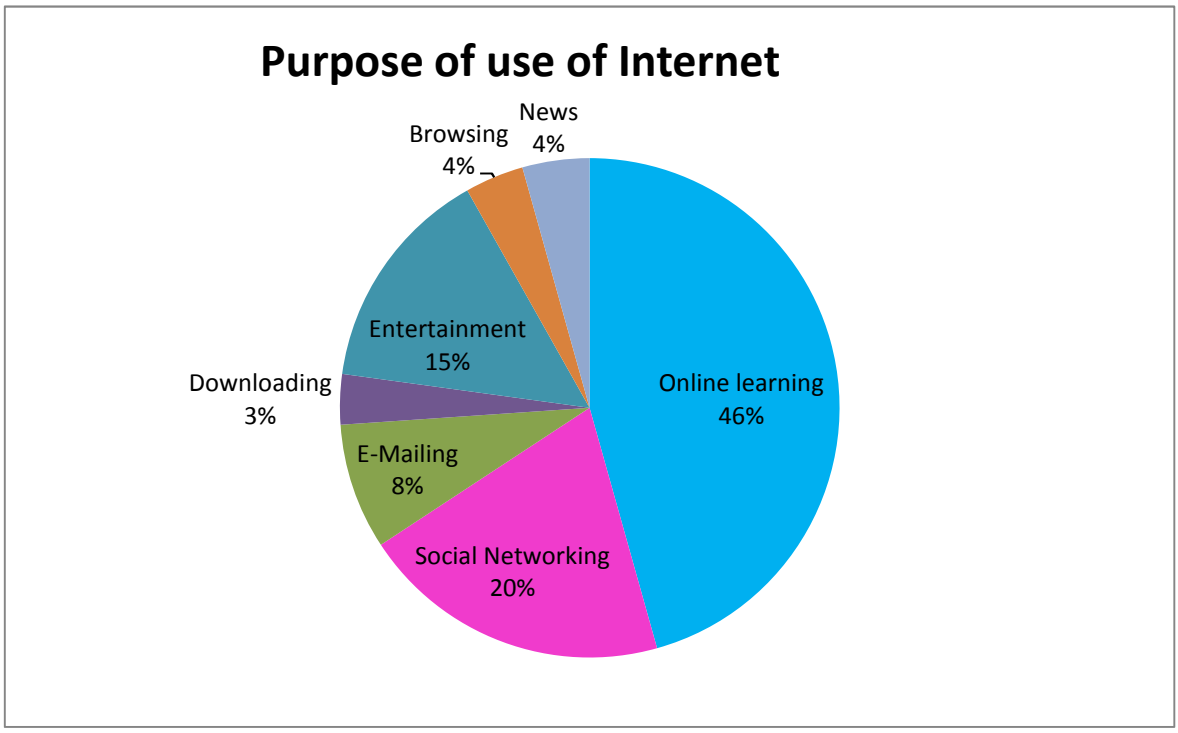

Figure 9

4.5 Using the Internet for educational purposes

The Internet has become one of the fastest ways of acquiring information and as a result many turn to its convenience when they are in a hurry to access information. Even when there is no rush for information, many avail themselves of the Internet because of its ease of use and vast amount of information available instantaneously. The University boasts a large and varied library, which is available to all students and remains up to date with material; however due to the Internet its utilization is decreasing.

4.5.1 The time students spend doing online research

My next step was to explore the ways in which students used the Internet for learning purposes, including the time spent online versus engaging with traditional print media. Candidates were asked how long they spent researching for an assignment; there was no specific indication asked of whether it was print versions or online, so this was researching in general. The following question was to analyse those students who do use the Internet and how much time was spent learning online.

The lowest time specified researching an assignment or project set out by a lecturer was less than an hour. There were some students who found general browsing to retrieve their information, for approximately an hour, satisfactory enough to obtain an adequate amount of information to produce a satisfactory assignment. Two hours was a popular choice among students when acquiring information for an assignment as 11% of the sample felt it was sufficient (see Figure 10). Some students attributed three or four hours to research which accumulated to 20% of the total sample questioned. The hours steadily increased until it reached 6 hours of researching. Bearing in mind that this question specified the hours spent researching a single assignment, 24% of the students found the necessity to research more than a day and as much as a week, although this could have possibly been misunderstood to be how long it takes to do the assignment rather than merely research it.

Figure 10

As the intention was not simply to gauge how many hours in general students spent studying, the students were asked a secondary question to elaborate out of their hours researching, and how much of that time was spent online. There were 2 students who voluntarily claimed that they do not use the Internet for study purposes, that they prefer to rather use the library and/or the texts that the lecturers have prescribed. 28% of the participants spent their time researching between the library and online. Here the results were judged in an hourly rate as opposed to daily like before, but there were students that explained that their online learning was extensive and it was "often days" spent searching for appropriate information. The results were in relation to those of the total number of researching hours students spent on an assignment ranging from: less than an hour (5%), one hour (9%), two hours (22%), three hours (13%), four hours (6%), five hours (13%) and six hours (32%) (See Figure 11). This question was answered in differential terms as some students wrote of the number of days during which they worked on their entire project or assignment while others only indicated the number of hours they spent researching; here the focus was specifically on the number of hours spent researching online.

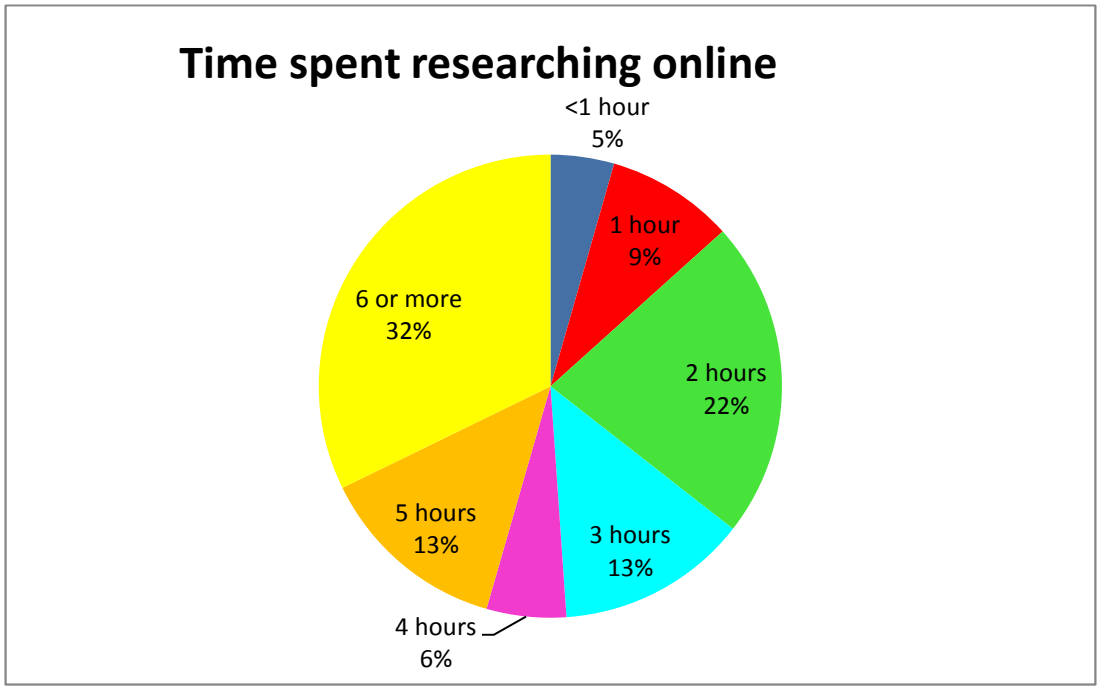

Figure 11

4.5.2 Internet-based versus print-based research

It could have been written as a hypothesis that many students would turn to the Internet as their primary, if not sole, source of information. There was a desire to determine what, if any, books students used and whether they still deemed such information sources useful or if their main focus has shifted in the technological age to the Internet. Students were questioned on "how much research [they conducted] using books, journals and short loan in the library" as a percentage of the total time spent researching; they were also given the opportunity to comment on their answer. As the questionnaires were analyzed it became apparent that the answers were not dependent on a specific major, those using the Internet came from subjects where other students were using the library, so it was not entirely the influence of the lecturer as much as a personal preference.

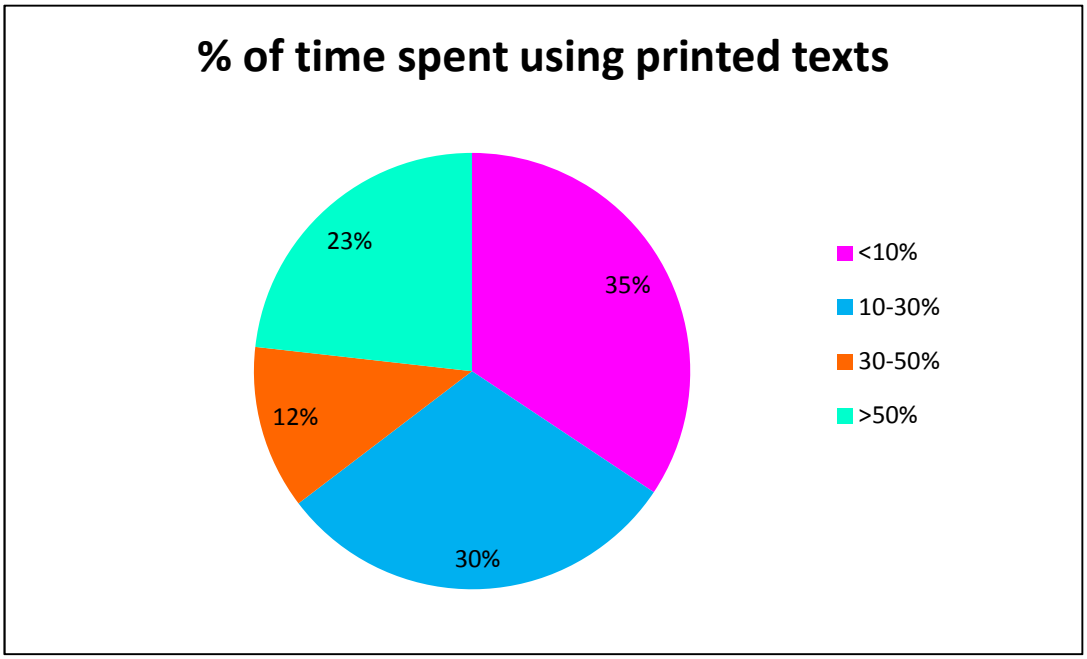

Figure 12

Figure 12 illustrates the results which were grouped into four categories depending on how students used books for researching. The first category was those who used books in less than 10% of their research. Typically these students did not offer reasons but simply used phrases like "none", "little to none", a "minimal" and a "minor" amount to indicate how much they used books as they find the "Internet is easier" to use. Since none of the students mentioned

that they were familiar with online library databases where academic journal articles can be found, I have assumed that the students are mainly referring to the Internet in general. Once again this could be attributed to the initial findings of the Internet being more easily accessible, as if students are off campus they are able to find the information online instead of coming into University to go to the library. However even the students who do live on-campus seemed to prefer to use the Internet over the library for personal convenience. Likewise the library has strict opening hours and this may possibly be inconvenient at a time when students are working late into the night to rush to meet an assignment deadline.

The students explained the only reason they would use printed texts would be if it was "required for the subject" and if the information they "got from the Internet" was insufficient, thus leading them to turn to the library. In explaining the lack of use of the library, 30% of the students stated that if they were to spilt their research into sources, only a "1/4 [would be] library" using the books, otherwise they would merely look at books to "enhance [their] bibliography" and not use them in preference to the Internet. They felt their library usage could be described as "average". For the initial 30% evaluated, it seems the library is regarded as a back-up when required. The Internet may now be regarded as the starting point for research conducted by these students. The next category of students showed a greater willingness to continue to use printed texts. These students used the library and printed texts for 30-50% of their research bringing students more in line with what the lecturers want. Students gave reasons as to why they turned to the Internet saying it would be "dependent on the assignment" and that "generally half" of their research was done in a library, so the relationship is the "same amount-50/50". A good proportion of the sample (23%) used the library for 60%-80% of their assignment knowledge finding the balance on the Internet. This percentile is substantiated with a select few explaining that the library and the print books were "more reliable" for their personal use as they personally found print versions "more accurate". Amongst the sample who used the library for more than half of their research there were students who explained that they preferred to use "mostly textbooks" or would frequent the "short loan" area within the library to find their information as lecturers placed books specific to the topic being researched. This division shows that very few students spend more than 50% of their time using traditional hard copy sources. The importance of the Internet is growing in respect of student research as the majority (65%) tended to favor the Internet and online learning over text books and printed text, as shown by previous questions

illustrating the amount of time spent online. The remaining 35% mostly favored printed texts but did look to the Internet to obtain their information as well when needed. From all the results collected it is obvious that Internet research was the most popular as evidenced by the amount of time spent online.

4.5.3 Favoured or specific sites

The students questioned were next asked if they had specific sites that they always used when researching; the options they were given were limited to the main sites - Wikipedia for links, Google and Google Scholar as directives to the articles and sites, sparknotes and the online library archives. Many students mentioned more than one site that they used thus the total number of responses (119) is more than the number of students questioned.

As shown in figure 13, only 22% of the total responses given by the participants explained that the research they do is conducted via the official library research sites. These sites are available to all registered students and include most of the well known online research repositories such as Jstor and Ebscohost. But a clear majority of students found their information on open sites: most of the research, 34% was done using Google search; the next most popular resource was Google Scholar which was chosen by 22% of the respondents. Of the students who indicated they use Google Scholar, only 3% claimed that they also used the online archives, suggesting 19% use Google Scholar as their sole resource. Wikipedia was the next most popular site, 17%, as it is often a choice when students conduct a Google search. Sparknotes is a popular site amongst students studying literature courses as it explains complex novels in more simple ways. There were only a few students who claimed to only use web pages that contain an .edu or .org web address as they are believed to be more academic and reliable.

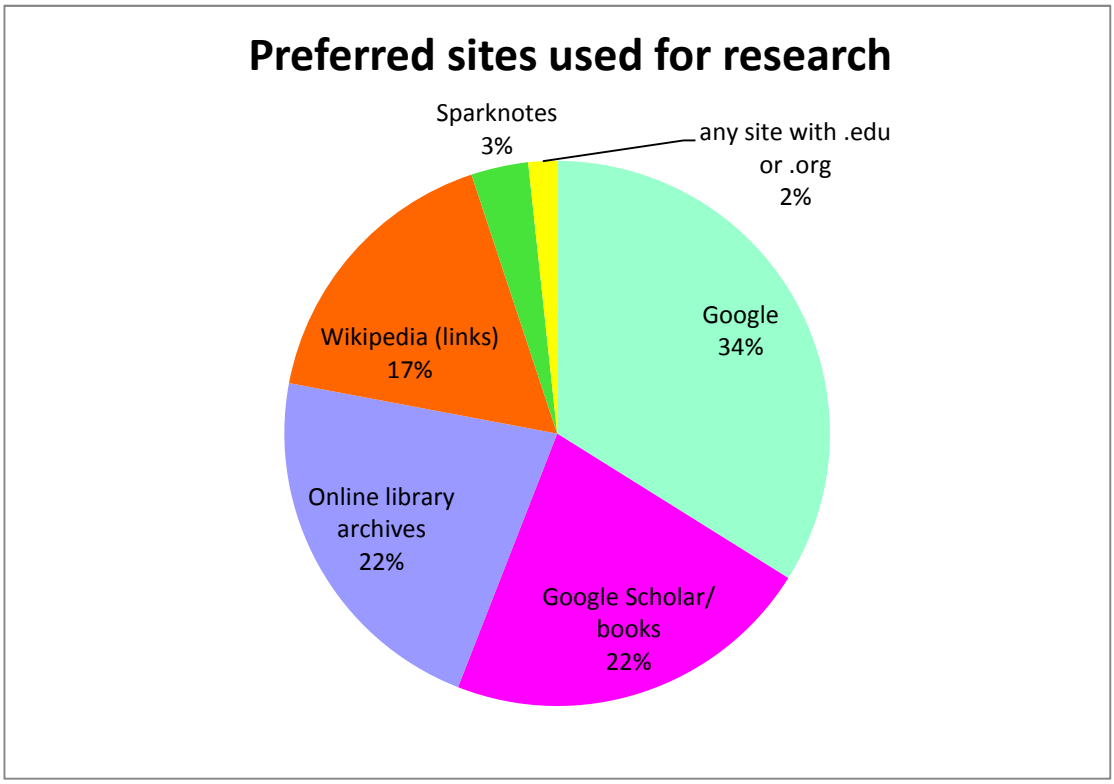

Figure 13

4.5.4 Selection of significant information

As the results from the previous question demonstrate, the largest sample of students uses the general search engines Google and Google Scholar to find their information. But such searches typically lead to an abundance of options for users to choose from. Unless the search is very specific and refined, these search engines merely search for key words in any article it believes would relate to the individual's search. The result is that users are typically given far more options than they would need, and often these results are irrelevant or surplus to the needs of the person doing the research. The students doing the research were, therefore, asked how they begin to select from all the information available when using Internet search engines such as Google.

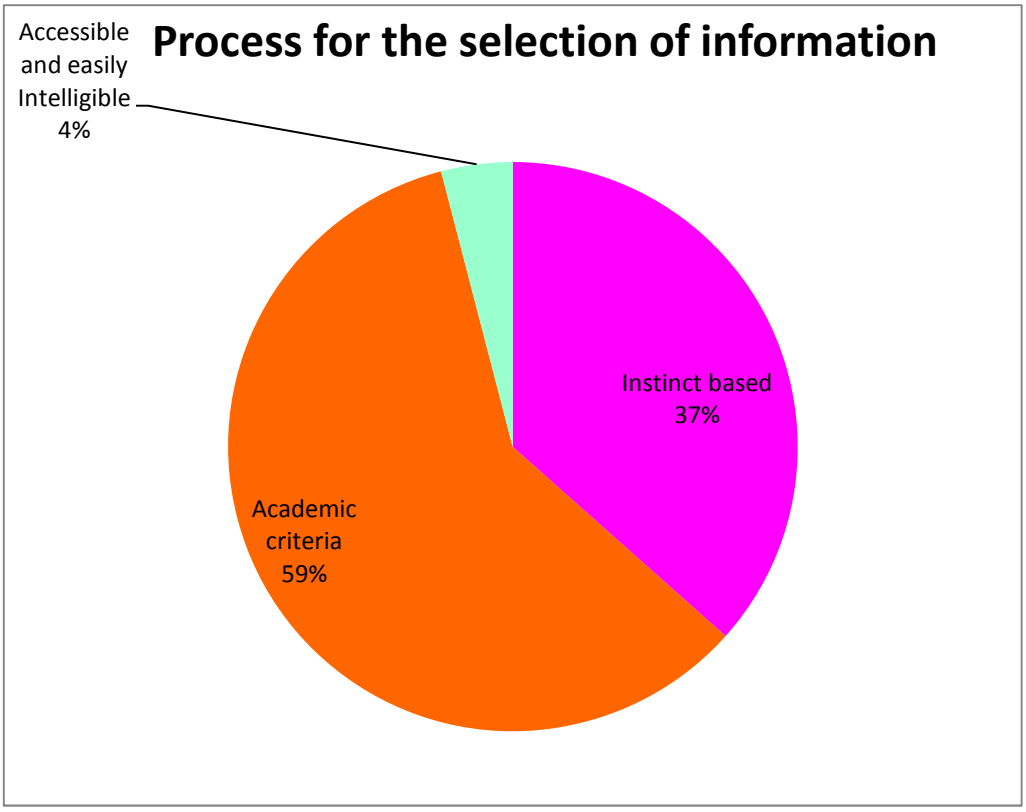

Figure 14

As Figure 14 shows, students, who are presented with multiple choices when they research, seem to think along similar lines when they initially set about sifting through the options. Students set their own criteria when searching for information online, tending to browse more than read in-depth. For example students tended to claim that they “look at what fits" and see which “heading [is] most relevant to the topic” in an initial glance through the search results; only then do they open that particular page to see if the article fits their needs. Another way students determine if the information is useful is by gauging if there is any “relevant info" in the brief explanation of the article or webpage on the Google results page.

In respect of instinct based site selection, students often displayed a notable confidence stating they used their "instinct" when determining what they regarded as the best information. The student would “first read” the synopsis offered and then “sift” through and “filter” out the web pages and articles that they felt were relevant. Conversely these students explained that if they were unsure of what they should use and unable to determine whether something was important they would simply "randomly pick" their links. This shows that

students are not prepared to go past the first page of results to see if there is any other information or articles which “sound legit” and are also “user-friendly” which is what students claimed they looked for when the results were displayed. 5% of the students said that they use the “first site that comes up” and whatever is “higher up the results” on the Google page.

The category of accessibility is determined by how accessible and intelligible a site or webpage is to the user. Students tended to prefer websites or web pages that are easy to access and simple to understand, as they are able to get more complicated articles from printed texts. Students rather chose the easily understood online articles. Wikipedia was often an initial starting point as the information is easy to understand and written by other lay contributors. Some students explained that they used “Wikipedia by default and then choose” which sites to go to through the Wikipedia referenced list at the bottom of the article. Even though it was only 4% who admitted to using such websites a final reason that was given was due to these sites, such as Wikipedia, being “user-friendly” and easy to navigate and understand.

In terms of academic criteria, the final category of student to be analysed is those who have either developed their own criteria for finding reliable and useful sources or use criteria set by lecturers to guide students. The students who did general Google searches would also look for information “from a reliable source” that they recognized and had possibly used before. Another group of students offered an alternative selection process, invoking them to use their individual agency, as they explained they preferred to seek and use “referenced” works, those that have a reference list or evidence that there has been research done. An explanation for this reasoning may be that they could then source the works of specific authors by relying on work that has been done by earlier researchers.

It is possibly due to the openness and ease with which individuals are able to upload information, that students attempt to determine what they think is the most “credible information” to use, as they sift through all the information. This credibility is difficult to measure without determining who the author is, when the article was published, how many

references there are, so judging this credibility cannot be determined at a glance of the overview of the article. This necessitates an in-depth view into the article to use their individual agency to ascertain whether it is suitable for their research. Students feel that they have the academic ability, and experience, to gauge whether the information is "academically legit" to use in their assignments. This shows the need for a great deal of individual agency and interactivity when using the Internet as many sites offer hyperlinks to other sites or relating articles; which in turn offers a great deal more information that students need to examine to find legitimate and useful works.

Lastly, to conclude this question, there were a number of students, 59%, who looked at the more formal guidelines and criteria set by the academic staff and used them alongside their own personal criteria when determining their choice of sources. These students looked for what they termed the “quality” of the information, which would imply that they had to have read the article in order to understand it. These students looked at the “author and date” which is important to the credibility of the article as many well-known authors in the subject and field are often widely published and it is not difficult to find them if academic sources are used. Online, “academic sources” are important to students, as it makes researching far easier than if Google was the source, as articles are selected and placed on the academic database especially to be used by students, as the information is known to be useful and credible. Those students who followed the online library databases would be seen by a lecturer as conducting one of the ideal researching methods as they use either “journal articles”, “peer reviewed work” or “educational sites” which are specifically geared towards individual student, academic needs.

4.5.5 Online library databases

The students were asked if they used the online research archives available when they are looking for information for their assignments. Figure 15 shows that almost half of the students (44%) said that they do not use the library databases that are supplied and paid for by the University. When asked for reasons many factors emerged, the most surprising answer being from a student who claimed they did not use them because they "did not even know there were archives" available which they could use without paying for the articles. In this context it is worth remembering that the survey was conducted amongst senior undergraduate students because it was likely that, approaching the end of their undergraduate careers, they would understand how to do academic research as well as be acquainted with the best practices in this regard.

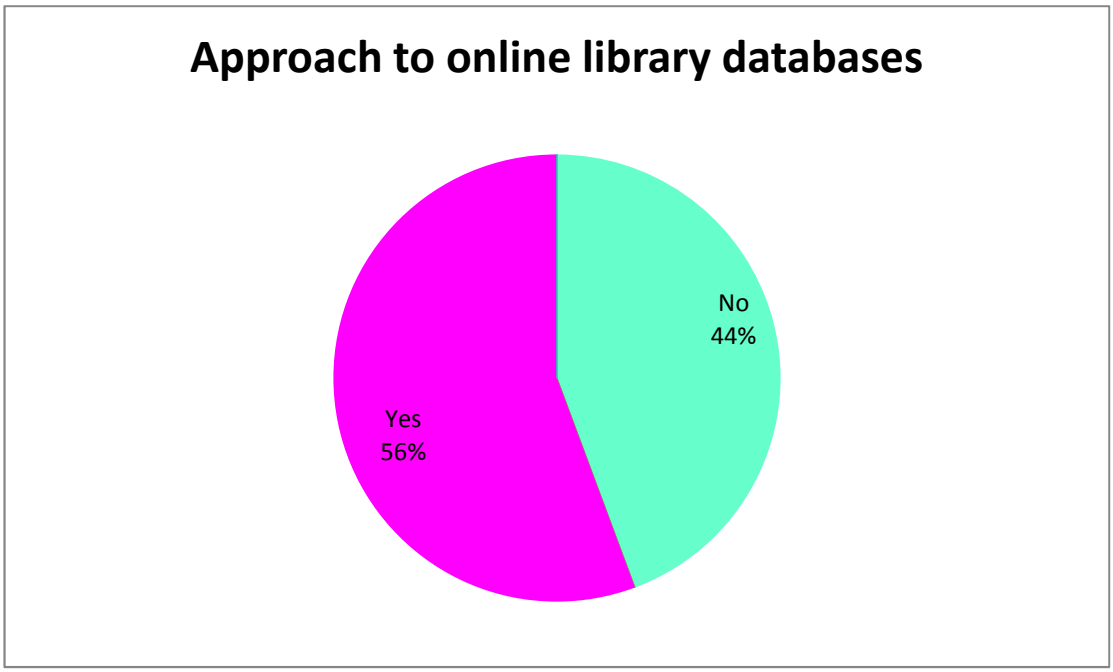

Figure 15

The remainder of the students, 56%, claimed that yes they did use the online databases provided by the library. Some of the answers were given without further explanation, therefore the depth and frequency is undetermined. There were varying explanations from some of the students who answered in the affirmative; some found Ebscohost and Sabinet to be the most useful, possibly because they are the most frequently used databases throughout the Humanities and Social Sciences. Other students explained that they use "only online journal articles" when they research on the Internet and find these through the online academic archives. Finally, only one student explained that in their opinion they found the

online Internet archives to be most useful and felt that it “should be compulsory” for students to use the archives as they are sure that the information is more “reliable”.

4.5.6 Pedagogical practices concerning the use of the Internet

The remaining two questions were harder to interpret because they concern students’ perceptions of the degree to which the disciplines in which they are majoring encourage use of the Internet. Obviously the results are the product of individual student experiences and it is quite possible that disciplines are inconsistent in their practices, with some lecturers encouraging and others discouraging Internet usage. Thus figure 16 shows two bars for each of the disciplines mentioned by the students in the survey. In addition the number of responses per discipline differed because they varied in popularity amongst the students sampled.

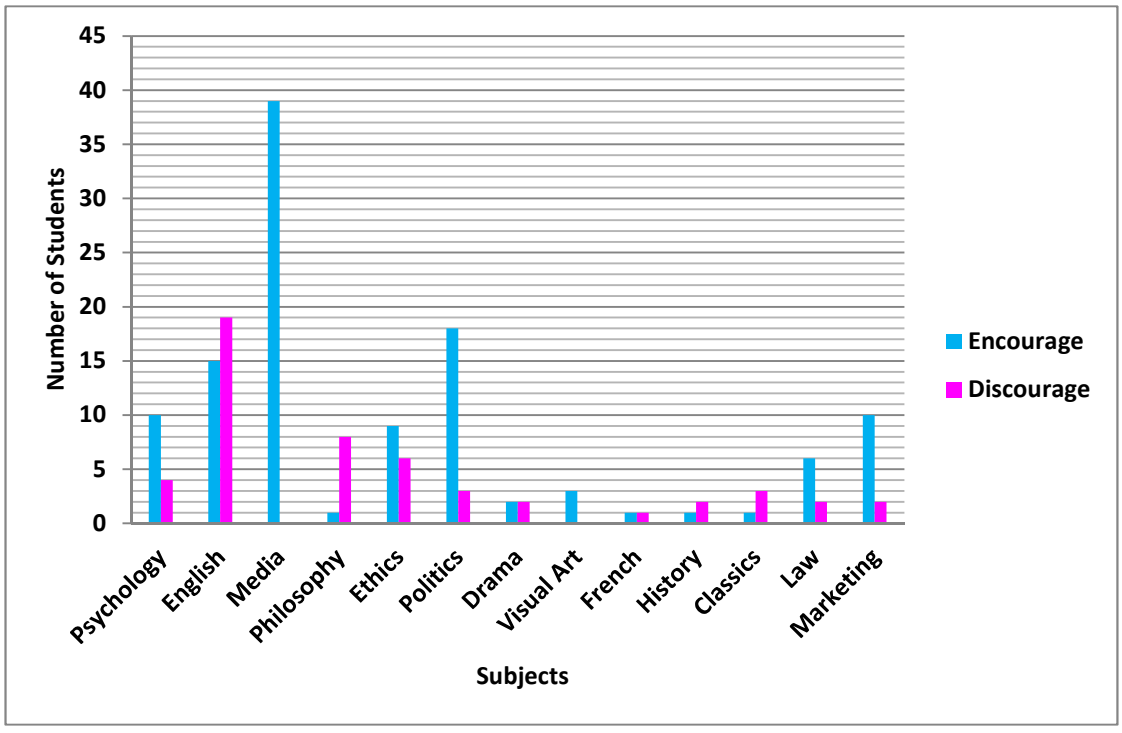

Figure 16

The most notable differences revealed were between the disciplines that clearly encouraged Internet usage and those that discouraged such online research. Media (100%), Politics (86%) Marketing (83%) and Psychology (71%) emerged as disciplines that freely encouraged Internet use with more than 69% of the participants. Philosophy (89%), Classics (75%) and

English (56%), comprising 31% of the participants, indicated their disciplines discouraged use the Internet.

While the sub-samples of each discipline are too small to draw any firm conclusion about the practice within those disciplines, it is possible to draw some general conclusions. Firstly that the attitude towards the use of the Internet varies considerably from discipline to discipline and perhaps even between lecturers within those disciplines. Secondly, overall more students (69%) feel that they are encouraged to use the Internet rather than discouraged.

4.5.7 Guidelines to the use of the Internet

The students were then asked if they were allowed to use the Internet for assignments and if they were then offered any "guidelines". Again it needs to be emphasized that these are the student's perceptions rather than the actual policies followed in disciplines.

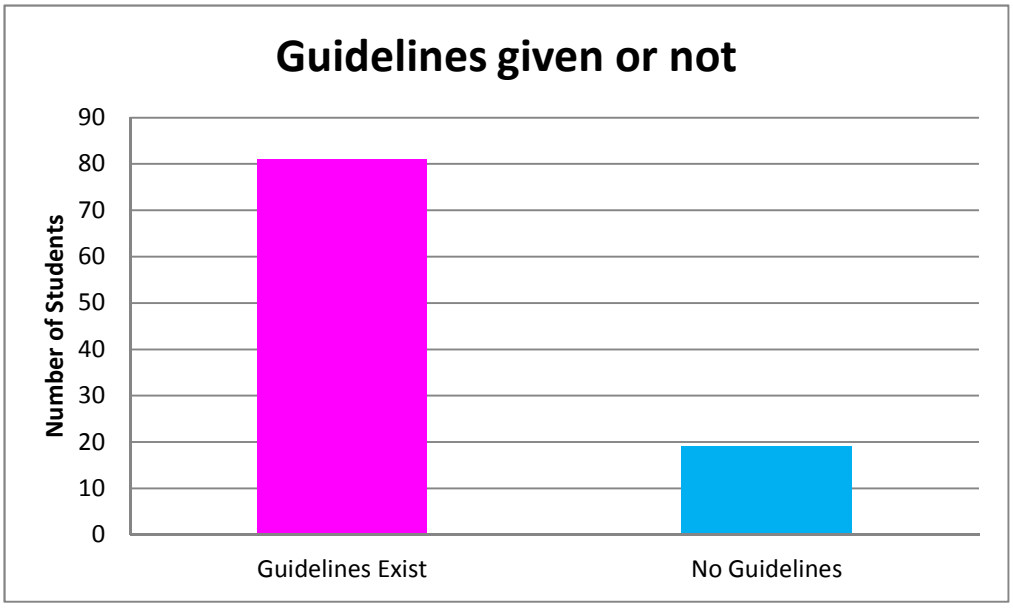

Figure 17

It is clear from this breakdown that the majority of students feel that they are given guidelines and interpret these as being tantamount to permissible use of online research material. However, their descriptions of the nature of the guidelines varied so considerably that it seemed worthwhile to break them down further using three perceived categories. The

following table breaks the guidelines down into 3 categories: weak, vague and strong. Weak guidelines include for example that students are able to use the Internet, but not Wikipedia. Students were also told they have to use relevant works, however what constitutes proper relevant works was not described, perhaps use of sparknotes or other peer-reviewed works. Students felt that the guidelines lecturers gave were often vague such as the lecturers not liking the use of Google; the sources need to be reputable and up to date. Nothing specific is made but just the recommendation to use relevant reliable works, leaving it to the student's discretion to determine what is relevant and/or reliable. Strong guidelines that students found helpful include referenced work, peer reviewed works, as well as specific sites given by lecturers, which are considered informative.

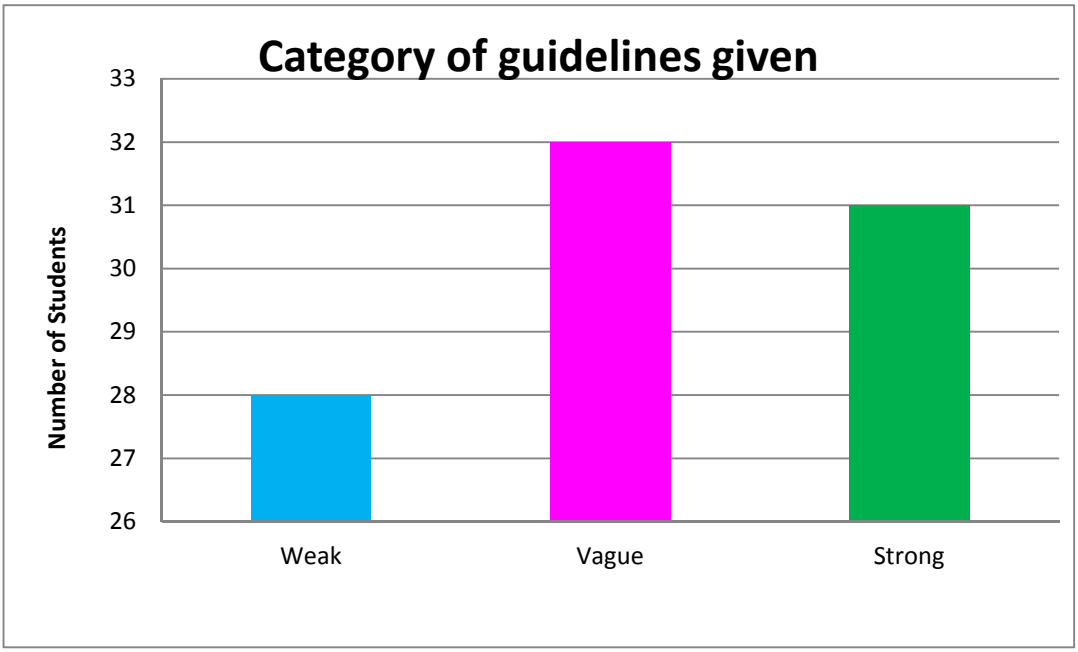

Figure 18

What this demonstrates is that there is a considerable lack of clarity both on the part of the respondents but also, one can possibly infer, on the part of the academic staff in the different disciplines. There does not seem to be any standard best practice when it comes to students using the Internet for research purposes.

4.6 Conclusion

The survey was designed to obtain a general overview of the practices within the UKZNP student community and, a number of key points emerge. Firstly, it is clear to see that almost all of the students use the Internet for a variety of purposes with social networking, entertainment or researching being the main uses, especially as research is increasingly integrated into everyday online interaction. Secondly, there is a variety of ways in which students use the Internet and therefore engage in their research; each student is able to act with a degree of agency and individualism. There is such an abundance of information available; students need to choose carefully when deciding which is most pertinent to their research. Thirdly, it is clear that the students interviewed perceived that there were no uniform policies regarding Internet based research as each user, lecturer or student, uses it in different ways.

While providing us with a general sense of Internet usage amongst undergraduate students, the survey provided only minimal information regarding the precise nature of the engagement students have with the Internet. Since the medium is essentially an interactive one, it seems important to probe more deeply into the nature of this activity. How exactly do individual students make use of the Internet, which is both a resource that holds enormous potential and a risky environment in which the sheer volume of information, both accurate and inaccurate, is overwhelming? The next stage of the research aimed to probe these questions more deeply by asking for answers to questions including: initial Internet usage, how they conduct their University work, how the Internet has been integrated into this work, how they begin their research online and their over-all understanding and opinion of commons knowledge.

Chapter 5: In-depth Interviews

5.1 Introduction

The interviews analysed in this chapter are intended to deepen Lievrouw's insistence that peoples practices play a determining role in the use of new media (2011; 15). This chapter will primarily explore the individual practices of students when they use the Internet for research.

The selection of students who participated in the in-depth interviews was based solely on their indicating, at survey level, that they were willing to do so. In the event, the students who agreed to participate came from a range of backgrounds and were studying a variety of subjects. Although gender was not explicitly used in the selection process, of the 15 people willing to be interviewed there were 8 females (Abigail, Cara, Cindy, Mandy, Nicole, Sindi, Shannon, Tanya) and 7 males (Brent, Joshua, Luke, Robert, Scott, Travis, Zava), a distribution which gave me the opportunity to consider whether gender played any role in the student's responses. Pseudonyms were given at random to protect anonymity and ethnicity as the students interviewed came from all race groups.

The interviews were divided into three parts. The initial section was intended to probe further into the candidates' familiarity with the Internet before entering University as well as their current use. The next section aimed to understand how each participant approached their academic research in the context of easy Internet access and their attitude to sourcing online material, while the final section was deliberately more reflective and attempted to gauge the participant's attitude to the growing availability of commons knowledge on the Internet.

5.2 Internet Uses both past and present

Many of the students interviewed had their earliest access and exposure to the Internet when they were either in their senior years of primary school or early high school, where they were required to use the Internet for school projects. Since, their earliest involvement with the Internet in 2003, their engagement expanded and diversified to include general surfing and

early social networking, through e-mail, until the introduction of Facebook in South Africa in 2006 (Want-to-know-it, 2012).

5.2.1 Initial Use and Access

Each individual began exploring the Internet at different times in their lives; however the reasons for the use were similar. Shannon was amongst the youngest users of the Internet in this sample as she began her use when she was approximately 10 years old to keep in touch with friends and family through e-mailing. Robert started his online career when he was in junior school because it "was new" and he wanted to share in the enthusiasm, something he did playing online arcade games through his dial-up connection. Scott at the age of thirteen used his friends' Internet connection for entertainment purposes: gaming, listening to music, etc. Joshua was fortunate to have Internet access at home from the time he was at junior school and described himself as belonging to the "old social networks", which included sending friends "e-cards" or playing online computer games. Brent, in his early High School years, would use the Internet at his school's Boarding Establishment, for what he called "obscurities" such as extending his collection of music and movies by downloading them from the Internet.

Cara, Cindy and Mandy all began using the Internet for basic research, required for school projects, before they discovered social networking, online games and e-mailing. Conversely, Nicole, Tanya and Abigail began using the Internet for personal pleasure rather than academic research, such as to e-mail and download anything they were interested in, until high school where they would research online if it was necessary. Luke was not required to use the Internet for researching at school as they were directed to use the library instead, so his use of the Internet was for gaming when he had time at the Boarding Establishment. Travis obtained his access at school as, unlike the others, the use of the Internet was a requirement for his school work and he was shown the basic techniques of using the Internet. Of the students interviewed, Sindi and Zava were the only ones with no previous experience of the Internet before entering University. Both students had been given a "basic foundation" understanding of how to use computers; using the Internet was a new experience for them and, upon gaining access, both Sindi and Zava used it for social networking, downloading as

well as researching for assignments. From these comments we see that most students had some access to the Internet but few were using it for academic research.

5.2.2 Students current usage and means of access

The students' uses of the Internet have developed as they have matured through their University careers, from mostly being for personal entertainment to include more academic research. The following is a general overview of all of the current uses of the student sample rather than individual accounts of what they currently use the Internet for. Unanimously the Internet is now used widely for academic researching for their assignments. One particular student acknowledged to attempting to use Google Scholar as opposed to a general Google search for her academic work, however if there was something she did not "know [she] Google[s] it", or even uses Wikipedia to obtain non-academic definitions. All of the students use some form of social networking channels such as: Facebook, Twitter, Skype or e-mail; however not all of the students have adopted the use of all of these networks. Students found the Internet interesting in that they were able to find many useful sites when they were browsing, not to mention the informative sites used for obtaining the news, weather, live sports updates or preferred radio stations (local or international). Other more personal, leisure-oriented uses were downloading recipes or e-books, sharing photos, downloading music, movies or television series or using YouTube.

All of the students questioned were full time students and as such would normally be expected to be at University every day for lectures and thus able to use the LANs and library to complete their assignments or projects. The amount of time students spent online, researching or browsing the Internet for personal information was dependent on whether there was an assignment due; as did the location of access to the Internet, which will be explained through a brief synopsis of each participant below. Abigail estimated that she averages 30 minutes a day on the Internet through a computer, with a considerable amount more on her Smartphone. Abigail uses the LANs on-campus only when she needs to access University sites to do research, download notes, and print. Brent has access to the Internet at home and therefore uses the LANs very infrequently, only when he is unable to access Moodle (an online network for lecturers to post notes and information). The amount of time

Cara spends sitting at her computer surfing is approximately an “hour or two a day”, excluding her mobile usage as she is on “more with [her] phone during Varsity”, and does not use the on-campus LANs. On an average day, Cindy spends an hour online browsing, however if she has an assignment to do, she will then research for an hour or two through her Internet access at home. Cindy uses her cell phone for all her social networking.

Joshua said that he is on his Smartphone for the “majority of the day” as it is easy and convenient; he passes his time reading the news or looking at sports updates. Joshua uses the LANs “at times” but predominantly makes use of the wireless connection on his laptop at University; this enables him to bypass what he sees as common problems like the “LANs are full” or the “computers don’t work”. Luke spends “upwards of ten hours” daily on the Internet between his mobile phone and personal computer, only using the LANs to print. However assignment research is included in that time and he suggested that his time online is “more focused when researching”. Mandy studies digital media and spends two days per week in her practical classes, where she has constant access to the Internet allowing her to do some of the research required as she either has to use the LANs in her free time or go to a friend’s house to obtain access to the Internet. Nicole’s daily Internet activities total approximately an hour, however when she has an assignment she finds herself online a lot longer; this is purely computer time which is accessed at home, the only time Nicole uses the LANs is to print her assignments. When Robert has an assignment or an essay he finds he will sit and do all his research in one day, which usually takes 4-5 hours; otherwise he spends 30-40 minutes a day online surfing the Internet, as most general browsing and social networking is done through his Smartphone. Robert previously made use of the LANs but he found they were too busy and “dirty” so now he uses his access at home to research. Sindi has a Smartphone and is on the Internet approximately 80% of her day; obviously when there is academic research to be done she will allocate her time accordingly. If she is on campus Sindi will use the LANs, yet avoids them when possible due to the long lines and wait to gain access to a computer.

When Shannon has a project she will spend hours on her computer researching. She stated that her average daily use at home, on her computer, is approximately 30 minutes but because she also uses her Smartphone the total time she spends online is considerably more. Prior to

her final year of university, Shannon never used the campus LANs yet “this year lots” of her time is now spent in the LANs because she is unable to access GroupWise (the university email system) and Moodle (the official university learning site) from home. Typically, Scott spends one to two hours online a day; however when it comes to researching he will put in more hours online. Scott uses the campus LANs as a last resort or when he needs specific software only the University can allow access to. Travis accesses the Internet for approximately one to two hours a day, more when he has an assignment, via his wireless laptop leaving no need for the use of the LAN. The amount of time Tanya spends online depends on the task; when something is due she then spends a “lot of time” on the Internet; yet for general purposes, such as social networking or e-mails, between her Smartphone and laptop she usually spends from 30 minutes to an hour online daily. Zava does not have access besides on-campus LANs; since he lives in a campus residence this is relatively convenient for him.

To summarise the previous sections the initial uses of the Internet were fairly rudimentary and mainly for non-research purposes, however a few students did use the Internet for school projects as extra research. Before entering University, some of these basic uses include: e-mail, music, movies, downloading, online gaming, social media, e-cards which were classed by one participant as the “old social networks”, pictures and purely for entertainment and personal pleasure.

Since coming to University, however, their use of the Internet has changed significantly. All of the students have access to the Internet-connected LANs on campus, yet very few of them utilise them for their own personal reasons such as unavailability of computers, the rooms being “stuffy” and overcrowded. Most of the students interviewed have access to the Internet off-campus on either their computer or via their cell phones. With the development in technology the introduction of the Smartphone, and its constant mobile access to the Internet, this has allowed students to gain instant knowledge as they are able to search on their cell phones. The current use of the Internet by the students consists of: research for academic purposes (being unanimous amongst the students’ answers), social media (Facebook, Twitter and YouTube), e-mail, networking, movies, music, e-books, blogs, news and sport. The amount of time the students spent on the Internet varied between at least 30 minutes to the

most being approximately 10 hours a day (depending on whether they have an assignment due).

5.3. Individual approaches to online academic work

The interviews aimed to elicit individual responses to the following questions: How do you begin researching an assignment and how do you proceed with your work? Thirdly, what resources do you use? In the context of this research the following resources can be regarded as typically available to students: i: the Internet in general, ii: Online journals accessed via University funded links, iii: Books or journals housed in the library, iv: notes in textbooks, v: lectures, vi: peer discussion. A final question attempted to explore the attitudes to these resources and the personal criteria they have set with regard to their choice.

In terms of how students begin researching an assignment, it was apparent that the online library databases, from the results of the questionnaire, were not a popular starting point. When it came to discussions of how they proceed, various answers were given. Students seemed to be more assertive in the ways they research and often stated they only use the Internet, especially in their questionnaires. It became necessary to determine how students with relatively little experience have come to be so confident with the Internet and navigating the abundance of information online, and if they received help or training. An attempt was again made to ascertain why the online library databases were unpopular. As the students mentioned they have many uses of the Internet, not isolated to research, they were asked to what extent they were distracted or whether they are able to simultaneously research and search the Internet for pleasure or social network, and the effects on their research. The students were questioned if they hold a part-time job; the objective of this question was to capture the constraints on time; however, after analysing the results this question proved not to be useful, as even the students that have jobs manage their time accordingly with the work load. Each of the in-depth interviews which follow explored these aspects individually.

5.3.1 Abigail

Abigail begins her academic research with a broad Google search to obtain a wide variety of sources before turning to Google Scholar to see if more academic works are available or even Google images to find applicable diagrams. Although she does not "officially" use Wikipedia, she does find it most useful as it gives "nice definitions" and "explains [concepts] well". Abigail does not solely rely on the Internet for her research; she consults her course reader or prescribed text, as well as three or four books on the advice of her lecturers, which is sometimes not sufficient for an assignment. Abigail feels the Internet is able to publish academic works immediately, offering new material on a frequent basis, unlike books which she feels are often outdated. Upon recommendation, Abigail attended a library course in second year, teaching her how to use the library effectively; she found that this has helped her with research and finding appropriate sources that the lecturers are satisfied with. However, although being shown how to use the library and its services, Abigail prefers to use the "Internet rather" and finds herself turning to Google to find her answers.

The sites Abigail uses online are very straight-forward, Google lists the highest ranked pages according to her search; she reads the summary shown to determine if the article or webpage is relevant, credible and necessary to her research. Abigail uses EBSCOhost to find journal articles, however she has to access these from the LANs so uses it as a secondary step in her research process. Although Abigail has access to the Internet at home, she finds it easier to download her articles at University and read through them at home. On average she aims to use five to ten sites, only when she feels she has the required information she begins her write up; however, Abigail finds herself "continuously researching" whilst at home. Abigail finds herself browsing, "flicking between" sites, especially social networking sites, whilst she is researching. This could be viewed as a distraction as it is a "bit of a break in thought", but she feels it is often a welcome break.

Her prior use and experience with the Internet could not equip her adequately as all she knew was how to do a basic search, nor did her courses in ISTN and ICDL (at school) help her, because that was basic computer use and not Internet usage or research. Abigail said that her expertise came from her own initiative and curiosity to conduct better academic research in

order to produce better work. Her lecturers did not assist with researching, they merely told her what she could and could not use. A few of her lecturers disallowed the use of the Internet and Abigail felt that it was fair as unless one was lucky enough to have attended the library course it was difficult to look through the information and there was a great temptation to use Wikipedia, which she feels is “not credible”. Of course it needs to be noted, Abigail admits she begins with Wikipedia as a starting point, continuing her research via references found there.

5.3.2 Brent

Brent explained that his English lecturers strongly encourage using the library and will set assignments that compel students to use printed texts in the library and not search online, as he would ordinarily do. When Brent is not forced to use the library he will use “just Internet” sources as they are very “convenient” and all you need can be found online. Brent uses the Internet to help him understand topics he is unsure of and will often type his entire assignment topic into Google to gain information to broaden his understanding. Adding to his idea of the Internet being convenient, he explains that everything is just a “click away to get information” and feels he is more competent using the Internet as he finds the library is “not easy for [him]”. With regard to distractions social networking, such as Facebook, had previously been problematic for him. Brent now attempts to keep his academic researching and social media separate as it hinders his academic work and he has to allocate more time to the assignment.

The only time Brent splits his time between the library and Internet is when he is forced to use the library and as a result was unable to give an exact time frame as it depends on how many sources are required. When given an assignment, Brent analyses the due date which determines when he begins researching; however he will “get into it” and apply himself once he understands the topic. The assigned topic determines how many sites Brent will use as if only one or two help him to understand he will not go further. When Brent uses the Internet to research, he begins with Google and often immediately opens Wikipedia to gain a “broad overview” and summary, not to be referenced as it is not accepted by his lecturers. Brent struggles with choosing which sites or WebPages are useful from a Google search and will

read through the synopsis of each and open any remotely useful options. Upon opening the webpage he skims the information to find relevant information; this for him is the easiest and fastest method of researching. Brent believes there is no specific way to determine what information is important, and believes there should be more reliable sources or sites to use; as he does not know of any in particular Brent ranks web pages and articles by whom they are written, professors taking preference.

None of Brent's lecturers have disallowed the use the Internet, although they sometimes discourage the use and then Brent will "stick to books" for that assignment. Brent expressed that when lecturers discourage the use of the Internet it is not fair as they "all have reasons for doing something". Brent feels he lacks the overall skills and general expertise on the use of the Internet, having never received any advice from the University staff, but rather from his peers. It was through his personal efforts and determination he became confident in using the Internet for academic purposes, yet despite his discoveries Brent did not come across the library online archives. Brent feels that it would be beneficial to students to be taught the different methods and skills needed for researching and says they "should be made to do it" as he "didn't know about it". Students are required to reference all works that are used in their assignment; however, Brent was honest in explaining that if he read something that confirms his idea he will not reference the site nor will he reference work that, to him, should be basic knowledge; he feels it is merely validating what he already knows. Brent concludes his research when he has a "couple of quotes [he] can use" to complete his write up, and due to his subject choice often finds just quoting from the novels to be satisfactory.

5.3.3 Cara

Cara goes to the Internet "straight away" and will Google what she is looking for. Her assignment research is done "exclusively [on the] Internet" which to her is "convenient, easy and faster" than using the library. Cara will use the Internet "concurrently with [her] prescribed reader" to solidify the information she finds whilst researching online; however she will "go to the Internet" even before she turns to her prescribed text book because of the "diversity of material and convenience". There are many "links to other related works" which are useful and speed up the researching process as she is given "access to different material"

that she possibly would not be offered if she were to use a book. Cara uses Wikipedia "depend[ing] on how much [she] know[s] already", and uses the available links to "research further and follow [the] citations to the source", thus Cara finds Wikipedia can act as a base platform in her research, leading to more academic works.

The estimated time Cara has available determines the amount of time spent researching for an assignment. Cara spends approximately a day researching online and "reading the material" she finds, however the researching and writing processes are not necessarily separated as she will often be "writing and go back and review" articles where necessary. Cara spends more time researching topics that interest her as she will spend a lot "more time" on the assignment than if she had very little interest in the topic. Cara begins her online research by using Google, but she also has sites she finds useful and will often go to them directly, one example is Jstor. Cara will choose the sites from a Google results page by "skim[ming] the blurbs [brief descriptions] to see what is the most relevant" or downloading available PDF's which can be consulted later. Cara when researching will have Facebook and Twitter open and the radio on, however she finds it distracting and it 'takes away the focus" as she struggles to both "chat" and complete her "essay"; nevertheless she completes her assignments on time.

Cara knows a modest amount about the online archives and "tried to use them once [but] didn't get far, so didn't go back to it". In her first year Cara was advised to attend the library orientation which showed her how to use the library and very briefly highlight the online library links, however she cannot remember it. Her lecturers have not disallowed the use of the Internet, yet she uses her specific prescribed text books and is critical of what she finds online. Cara's personal criteria for using articles and web pages are as follows: her "first judgement" is the "format" of the text, whether it has been written in an academic style, next she "skim reads" the article to determine if it is "intelligently written", before reading it in depth. Cara thinks that she has enough skills to research in a "more targeted way" and "look for authors" and or determine whether the article has references or is "linked to a University or other institution".

5.3.4 Cindy

Cindy will initially go through her prescribed readings and lecture notes to give her a basic understanding to form the basis of her online learning, which is largely where she finds her information. The search engine she uses depends on the assignment, if she is looking for general reviews or a newspaper article she will then Google a few key words, the same for when she needs more general information. Cindy prefers to use Google Scholar if she is uncertain of the topic as she considers it more trustworthy compared to Google where she would need to sift out the relevant information. Cindy feels that by searching through Google Scholar the results will be more academic and specific to what one is looking for, so this is "good" as it makes researching straightforward. Cindy admitted to using Wikipedia, to draw on the sources and links at the bottom of the article as there are "often good sources"; however she will not reference Wikipedia as they have been warned not to use it in assignments. Cindy does not often voluntarily use the library but on occasion when books are required for her assignment; she will make use of the books on short loan. When Cindy is unsure of a topic she will either approach a lecturer, if they are available; or she will turn to the Internet to "clarify [a] term" or concept.

Cindy will spend between two and three hours reading different articles and becoming familiar with the topic before attempting to begin writing her assignment. Cindy is not bound to strict times of researching as she has constant Internet access at home. Although Cindy spends a number of hours online she will only use three or four articles or sites per assignment as she finds it is "too broad otherwise". She has a word document open and plans her assignment in point form (each point is a new idea) adding in quotes that will be useful and necessary for her assignment, so when she is reading an article she will "take things out that look useful" and when she feels she has "enough points and [a] good structure [is] generally when [she] stop[s]". Cindy finds herself on other sites "all the time", which she thinks is sometimes distracting, as they are constantly open in different tabs.

Cindy considers she has learnt the art of academic researching and "how to discern what is good and what is not". This for her has "come through time". Cindy, like many of the other students, does "not [know] much" about the online archives and has "never heard [them]

mentioned" before. Although her lecturers have "never said [they] can't use [the Internet] at all" they have said that they should not use sites such as Wikipedia or Spark Notes. Through high school Cindy was taught how to use the Internet as well as reference articles and sites she uses online. Nothing was taught or shown to her at University. Cindy finds she refrains from using works that are not referenced, or traceable, as in the end "it will not benefit" her and her research.

5.3.5 Joshua

Joshua immediately turns to the Internet to begin his researching process where he uses "Google a lot and, if need be, Google Scholar". Joshua tries not to use Wikipedia, turning to other University sites recommended by lecturers or peers. Joshua very seldom uses the library and feels the Internet is "easier" and offers a "broader idea of what is available". Joshua will "pretty much" find all his information on the Internet and for private use he will attempt to "figure it out" himself or "research online" until he has an answer. Joshua begins with a Google search and uses "Google Books if [he] can"; similarly to the others, he will scan the results page to find relevant topics and then "click on the sites".

Joshua attempts to research for "as long as possible" and "as soon as possible" as it is "easier [for him] to make sure [he is] finished with enough resources" and enough time to complete his write up. Typically an assignment takes Joshua a week to research and complete, as he works between his lectures, and although he does "lots of research [he] battles with time". Joshua has no set number of sites he uses after he does his Google search and it "depends on [whether it is] relevant or not", but on average he seems to use 10 to 15 sites per assignment that he adds to his reference list. Joshua will finish his researching when he has "enough material to write a comprehensive essay". Occasionally he will "research again [but] generally not". Joshua will look at other sites in conjunction to working on his assignment, which keeps him occupied but not to the extent that it affects his research as he would "rather sit [and] get it done, than do what [he] want[s]".

Throughout University he has always been “told to use archives but [had] no visual instruction” and they were always “advised not practically taught”; yet for Joshua “Google seems to be valid and reliable enough” for his research. Joshua believes that the University should give the students some direction as to how to research and what is good and useful to use and what “not to use” that would definitely “help”. It would be “beneficial” to show students during their earliest years at University; however Joshua feels that not everyone will take it seriously so it would be more beneficial to show students at second or third year how to use the online library archives for research. Lecturers for his courses do not specify what students are allowed to use, however he does believe that lecturers prefer them to use books.

5.3.6 Luke

Luke admits to usually leaving his assignments and projects “until the last minute” and as a result most of his research is done online as the access is constant and “at home”. Luke does not enjoy using the library, as he finds it difficult to find books; as a result he attempts to obtain the book in its online form. The lecture notes which he takes in his seminars remain unused for assignments; while they are useful “for broad terms” he feels he needs additional information to differentiate himself from his classmates when doing assignments. Luke will always turn to the Internet before consulting a peer and as a “last resort” will turn to his lecturers.

Upon receiving an assignment topic Luke tries to gather his research as soon as possible, although he does not complete the assignment right away as he is a self-proclaimed procrastinator. As he spends so much time online surfing he will usually devote between three and four hours a day, over a few days, to research when he has an assignment, that time increasing as the due date looms. Luke finds he works well under pressure and “at the last minute” he will read through all the information he has obtained over the last few days and write the assignment. Luke will go back and research a final time before he finishes his assignment, making sure he has “relevant articles” as well as to gain “clarification” on terms he is uncertain about. On average Luke looks at between 20-30 web pages and articles but in the end “may use five” of those as he finds it difficult to find quality, valuable, articles.

The first place Luke searches for information is the Internet but more specifically Google, as he can fine tune his key words to find appropriate information and articles. The second site is Wikipedia where he looks at definitions that help him understand terms and ideas while offering a variety of references. Luke looks at other University sites and uses articles that look and sound professional, often judging a site by its name. Luke finds it difficult to decide what information is the most important and feels that if it is "relevant to the topic", "answered the question" how he required it to be answered and if he could "use phrases" from the article then it was a good enough article to use. Luke believes that no-one has the necessary skills required to be fully competent in researching online, yet as he does 90% of his research online he feels he has a better understanding than most. Luke has tried to use the online archives throughout his University career but has "never had much luck" as it always says "no access". When in first year Luke attended a compulsory library orientation which showed him the "basics" and was more to do with the use of the library than the Internet. None of his lecturers have ever said that the use of the Internet is not allowed; they will give an assignment requirement or outline stating how many references need to be books or journal articles. The lecturers' advice is "very general" as they give hints and suggestions for sites to use.

5.3.7 Mandy

Mandy explained she prefers using printed versions of books, and upon receiving her assignment topic will go to the library and get "books on the broad topic" to substantiate her argument. Once she is satisfied she has gathered enough information from books, Mandy will Google the topic and definitions she is unsure of. Mandy uses books as she believes they are "safe, relevant and legitimate" and will "always resort to books first"; as she feels books have the "information all in one place". For Mandy sometimes the Internet is used to back up claims in books or to understand something a book has failed to fully describe. When Mandy is given an assignment she usually spends half of her time doing research, and if it is a big assignment (approximately 10 pages) it could equate to 20 extra hours typing. Mandy spends her free time in the library to find her books and will leave with no less than six books to work through to structure her essay. The information she gathers from the books she will cross reference with the online information she gathers to confirm it is correct.

Mandy will choose approximately five or six online resources to read and determine which are relevant and what "sounds the most educated and informed". Although Mandy likes to "get [her] research done first" she never ceases her researching until the end and will "research until the conclusion". Sometimes when she is "proofreading, unless [she] run[s] out of time", she will refer back to her research to make sure she has correctly and most effectively understood and portrayed her ideas, so for Mandy it is a continuous process. Mandy has disciplined herself to keep her academic research and social media separate, so isolates her use of Facebook and Twitter to her Smartphone.

When Mandy researches online she goes directly to Google and to sites she recognises. She believes sites to be valid if there is an author and a date and will filter down through the first page of Google results to find such articles or web pages. If it "sounds academic" she will use it or if the author knows "what [they are] talking about"; she breaks the topic down into key words that are refined and "narrowed down". Mandy was never specifically taught how to use the Internet and conduct her research; it has been through the help of her friends and trial and error that she is able to research effectively. Although Mandy has now had a lot of experience she will "sometimes feel [she doesn't] know what [she is] doing"; and while she knows about the online library archives she does not use them, yet she "would love to use" them. Mandy has found her lecturers unsupportive of the use of the Internet and they disallow its use for researching. She has found an inadequate number of books on specific topics in the library, for example her Marketing subject, and has to conduct an inter-library loan, which takes a few days to get her book. Mandy suggests that lecturers become aware of what books are in the library before setting assignments and encouraging the use of books over the Internet.

5.3.8 Nicole

Nicole begins her assignment research by looking through her prescribed materials such as textbooks or course readers. Nicole looks for links to the Internet in books, failing that she turns to Google and Google Scholar to find useful information. Nicole is a self-proclaimed "Wikipedia person"; however a few of her subjects, namely psychology, do not allow sites such as this to be referenced in assignments. Nicole does not use the library, as she finds the

information she requires online, as even when she is unsure of anything she will look on the Internet for her answers before consulting her peers or lecturers. To define a split in her time allocation, she believes 95% of her research is based online, whilst only 5% is done through printed text. Nicole would spend, on average, a week completing an assignment, depending on the size and depth of the topic. Her home Internet connection is constant which not only saves her the time spent travelling to do research on campus but also explains why her research is so prominently done online.

For Nicole, the subject plays a role in determining the amount of time allocated; for example, Media requires more time to be spent researching as opposed to her other major, English, which is less theoretical and more based on material supplied by lecturers. Nicole believes trusted sites should have an author, and considers Google Scholar gives more reputable sites. When she does a Google search Nicole goes through the first few articles before going into the site to see whether it is informative enough for her assignment; however she does not usually go past the first page of results. Nicole uses approximately four or five web pages or articles per assignment and makes use of the hyperlinks to direct her to other useful related sites which may result in more references. Nicole constantly refers back to the assignment topic to ensure that what she has found will "correlate with the question"; while referring to the research she obtains to make certain she understands what she is using in her assignment. Nicole feels that through time and experience she has obtained the skills for academic online researching. Although aware of online archives, Nicole has not used them since first year for a psychology project where they were told they had to use them. Nicole was given a step-by-step set of instructions in first year which she cannot remember and has not used since. She feels the University has not prepared her enough for online work as she had to rely on a friend to show her how to use GroupWise when she was unsure in first year as the University expected students would find out for themselves. Throughout her time spent online, Nicole finds she gets "very distracted" with other sites and is "very often" on social networking sites which impacts her work.

5.3.9 Robert

Robert relies heavily on the Internet for his academic research, an approach which is, he believes, supported by his lecturers. One of his majors is Law and the information he requires he finds online through a Google search; his other major English, provides him with articles and the novel to base his argument on. However even though information is supplied by lecturers, Robert will still turn to the Internet to obtain alternative opinions and responses to the novel. Robert will look through his lecture notes to determine how much research is required before using the Internet, justifying his decision by explaining that it is convenient, as he has access at home, as well as "quicker" and that the library is redundant and the "books are old". Robert typically dedicates two days to research and complete an assignment, as he works well under pressure, however due to time constraints, will miss University in order to complete his assignment. Robert will begin his online research with a general Google search on the topic, author or on an article he already knows about. Robert does not have specific criteria to discern what is relevant or reliable; he knows the general idea of what he is looking for, so enters each page, and skims through the article to determine if it is useful and academically sound. The number of articles and web pages he uses varies, the first page he looks at could have all the information he feels he needs and considers to be both credible and correct but on average he will use five web pages. Robert will stop researching when he reaches his word count as he feels his assignment is then complete. Due to Robert researching at home, and not on-campus where access to certain popular sites is restricted, he is able to access social networking sites and ends up researching "random stuff" which he finds distracting.

Robert feels he has the overall skills necessary for research, knowing enough to pass his assignments; however with the aid of his lecture notes it is not difficult to find relevant or reliable information. Robert was unsure of the Internet archives or how to use them, and reflects that he was possibly informed in his first year, yet nothing was ever validated enough to ensure continuous use. Robert stated that the archives would be beneficial to research, but felt a compulsory training session, out of lecture times would be an ambitious request. In his first year, his Media lecturer offered some recommendations to useful sites, however nothing was shown and the library archives and journal databases are still unfamiliar territory.

5.3.10 Sindi

Sindi came to University with no Internet expertise and has received minimal help regarding how she should use it. During first year, one of her tutors explained how to use the library and Internet and guided her to complete her first assignment. Other than this very basic help and training, Sindi has received no guidance and has learnt via her own trial and error. Sindi's initial assignment research begins with Google where she searches specifically chosen key words relating to her topic. Sindi always turns to Wikipedia as a resource, yet does not use it in her reference list as she was told not to; she rather looks at the foot notes and links that lead her to other appropriate sites. Sindi, through her search engine results, will endeavour to use sites that are "formal" (with an author and references) and "up-to-date", these being her pre-requisites for a reliable site. Sindi sometimes finds it difficult to find what she is looking for and feels this is due to a lack of researching skills. Sindi finds it difficult to see what information is incorrect and has to look at other sites to cross reference the information, or rely on her own frame of reference to understand what is valid and relevant. Although Sindi does "not really" use the library she makes use of printed text such as her lecture notes, course readers and prescribed texts books, depending on the assignment criteria set by her lecturers. The Internet, for Sindi, is the easiest process to gaining information as there are "different opinions" and ideas as opposed to "one point of view" offered by a book.

Sindi usually spends 2 days completing an assignment; she will dedicate a day to researching and a day to writing her assignment. Often Sindi uses her course reader as an alternative reference to the Internet as she feels it is sufficient as a required book reference, otherwise she has to go to the University library specifically to get a book or journal. Whilst researching online, Sindi often has up to ten windows open reading the page contents. She does not have a particular set number of sites per assignment, but it is "lots" and she will research continuously throughout the assignment. The Internet is her primary research medium, therefore when she is researching for an assignment she rarely gets distracted and will use her Smartphone to check her social networking sites. With regard to the online archives, Sindi knows about them but feels the little she knows is "not enough". She would like to know about more of them and how to use them more effectively.

5.3.11 Shannon

Shannon goes to the "Internet first every time" as she "seldom" goes to the library. When uncertain of something University related, instead of e-mailing a lecturer and waiting for a response she looks on Google as it is "instant" or if it is a definition she does not understand she will look on her Smartphone for an explanation as it is easy and accessible. Likewise with her personal work, Shannon finds the Internet less daunting and "awkward than asking people" and it keeps her up-to-date. Shannon uses her time constructively and will go to the LANs during her free time on campus as opposed to sitting outside the lecture hall waiting for her lecture to begin.

The time Shannon allocates to her research and assignments has increased to a "lot longer" in her third year. As a result she will spend around a week researching "before [she] start[s]", this researching time is split between reading through her prescribed text books and then researching online, approximately four hours a day, to find something different to what another student may have. Shannon feels that one can never do enough research but forces herself to stop researching to begin writing her assignment otherwise she will run out of time. Shannon will only check her social media networks before she begins researching "otherwise [she] doesn't focus".

Shannon analyses her topic to determine her key words before going to Google where she continuously refines her search until she "read[s] through articles" that are appropriate and "close [sites] if [they are] no good". The number of sites used for each assignment varies; she will go into "each site" on the first page of Google results, yet will not go further than this results page. Shannon believes blogs are "one sided" making her cautious of using them as they are often opinionated information. Shannon deems information important or useful by whether it "supports [her] stance" and if it would aid her in being able to "express [her] point of view better"; also she will look at the author and their credentials to determine if the article is good enough and if she has previously read an article by them. Shannon feels that the "whole generation is missing out on" having proper research skills. Before the Internet generation one knew how to research with a book and only a book, now there are so many options none of them is used in depth. She only knows of the online archives that were

recommended in her first year by the Psychology department. In her experience Psychology was the only "forthcoming" subject to give students' guidance and explained they should use sites such as EBSCOhost, which is the only one she knows about or remembers. None of Shannon's lecturers have disallowed the use of the Internet, but they have requested that students use both books and the Internet and they also discourage students from using Wikipedia.

5.3.12 Scott

Scott relies on the Internet for his research, primarily Google using a few "key phrases" to see what is available. Scott will search through Google Scholar and explore the more academic results, all the while adding to his references to possibly enhance the overall knowledge gain for that specific topic and assignment. Scott integrates the Internet into his daily life; occasionally using Wikepedia to gain a better understanding through the easy prose. Scott finds that by using EBSCOhost he is able to, conveniently, find online journal articles through the online library database, leading him to seldom use the library unless specifically told to do so by a lecturer. If Scott is required to use a book, he will use shortloan as he feels the books have been put there for a specific reason and they were "hand picked".

Scott allows himself a "couple [of] days" or even a "week sometimes" to research and complete his assignments, which for him is a simultaneous process. At the beginning of the assignment process, Scott will acquire a "handful of sources" from the Internet around which he structures his assignment before beginning his write up; while continiously researching until he is near to completion and feels he has fully answered the topic question. Scott accesses some 12-20 sites per assignment, and although he will not use all of them he will reference them in his bibliography. Depending on the site and whether Scott has had any prior use will contribute to determining whether he finds it reliable or relevant to use in his assignment. He used the example of EBSCOhost as a reliable source. He feels if the information relates to the topic and he is able to use and integrate it into his assignment he will use the source; as the content is what draws him to use the site for current and future assignments. Scott will often "justify a short break" whilst researching and will YouTube various videos, as he does not subscribe to social networking such as Facebook.

Scott has used the Internet on numerous occasions, for research or personal browsing, therefore believes he has a good sense of how to effectively use the Interent. Scott is not acquainted with the online archives but through a Psychology tutorial in his first year he learnt how to find “good academic results” and obtain papers, peer reviewed works and articles that are concise and valid. In his final year of undergraduate studies the lecturers have no specific requirements for references or sources, therefore Scott uses the Internet. Besides the very basic outlines and guidelines Scott still relied on “trial and error” to decipher the best research method for him.

5.3.13 Travis

Travis begins with the Internet, mainly Google like many others questioned, for researching or personal browsing. Whether he uses the Internet and/or library books for him is dependent on the subject as well as the specific course lecturers; for example for Media he uses the “Internet mainly” and Marketing uses library books. Travis believes he gains a better understanding of the topic through the Internet as the explanations are often more simple than those he feels he can find in books; when he finds he does not understand one site he will merely move on to another. Depending on what Travis is searching for, he will use Google to search, especially the definition of words; only later will he look in books in the library and usually only if he has found the author mentioned on the Internet. When conducting research, Travis uses a combination of the Internet and books as when he is working with books he always has his laptop open to cross check information; the Internet is ultimately the easiest source to “find facts” and he will “check first on the Internet”. Travis aims to have his assignment completed before the due date to avoid any last minute rushing. He usually works for a couple hours a day, simultaneously researching and writing his assignment, with breaks in-between, for a week before the assignment is due, approximately fourteen hours in total as he aims to “finish way before” the due date. Travis is strict in that “study time [you] do not mix” with social networking so that it is “pure research”.

Travis will initiate his research with a broad Google search where he inputs a phrase from his assignment topic and scans the results until he finds an article or page relating to his topic. For him to consider an article or webpage to be reliable it needs to be relevant and contain an

author. Travis explained that he turns to the online library catalogue to find books and will also use books to cross reference his Internet results as he does not “trust the Internet totally”, as he has “found stuff [that was] not true”. Travis suggested that in his experience his marks are generally not as high when he exclusively uses books compared to when he uses the Internet. He attributes this to the fact that the information available on the Internet is both easier to understand and more up to date when compared to books. The only online archives that Travis is aware of are Google Scholar and EBSCOhost which he was taught to use by a friend and since then uses them often. His lecturers only specified that Wikipedia is not permitted as it is not a credible source, and some feel the use of books is important but do not specify that students use them exclusively.

5.3.14 Tanya

Tanya begins her research process by analysing the assignment topic and breaking it down into smaller parts revealing the areas where she is unsure, from which she looks to the Internet for answers. Tanya regularly uses printed text in the form of course readers, the text books required by the course and journal articles the lecturers have highlighted; she feels these are satisfactory enough as printed text to not visit the library which she stated she does not use “that much”. All further knowledge then comes from the Internet. For both personal and academic work she turns to Google, as in her personal life she enjoys cooking and will look on the Internet to find new recipes.

Tanya does not have a specific time frame she researches for and will research for “however long it takes”. On average, without distractions, she would complete the entire academic assignment in three days, as she researches and writes concurrently. When Tanya wants “reliable sources” she initially goes to Google Scholar as she deems it to contain “worthwhile” articles and sites, however Tanya finds Google most helpful when searching for a more general understanding of a topic. The sites Tanya ultimately chooses depends on if it is “relevant to what [she is] looking for” and an overall “good site to use”. The importance of the information on the sites she enters is determined by whether she understands the information as relevant to the question and requirements set by the lecturer. Tanya believes she boasts the necessary skills required when researching, such as the ability to go around the

Internet and find information as in her opinion it is “easy” and “user friendly” and through more interaction the use of the Internet gets easier. Tanya is aware of the online archives and “sometimes” uses them even though she feels they are not sufficiently user friendly, however credits them with being useful to find something topic-specific. Lecturers have never disallowed the use of the Internet, however have also never specified the requirements set, although the course reader and text book are encouraged reading.

5.3.15 Zava

Once given a topic, Zava would look mostly online for his answers. The Law faculty stressed the vast amounts of money invested in the online digital archives and that the students should use these effectively. As a result of the Internet having all the necessary information he required, he did not see the necessity to use the library unless they were required to do so for a specific assignment. Zava uses Wikipedia as a general starting point if he does not completely understand a topic, even though lecturers do not approve. In his view the site offers “general information” which helps him clarify information he is unsure of and he also noted that he finds it unnecessary to reference it as he used it simply for a “general overview”. Although he would turn to the expertise of fellow students or academics, he used the Internet, specifically Google, for convenience as it is a “short cut” and “always available”.

Upon receiving a topic Zava allows himself 2 full days to research and complete the assignment; from analysis of the topic to conducting research in the form of his class notes and the Internet. He only has access to the Internet on-campus in the LANs and feels it impacts his research as waiting for a computer and the distraction of the constant “talking” wastes time; so he uses the LAN to download the information he requires and works in his dormitory room. The amount of time he spends on the Internet and the number of sites he uses differs depending on the topic and subjects given. If he understands the topic then little research and clarification is needed, otherwise he uses Google and SABINET. The sites he chooses from a Google search are those that look the most relevant from the short description offered, and which answer his specific questions. His lecturers sometimes specify a particular number of different sources and sometimes gave the authors or the journals which they

should look for, making the researching process faster and less complicated as students are given the credible, valid and reliable sources as supplied by the lecturers. Zava ceases his research when he feels he has answered all his questions, met the requirements and has a sound assignment worthy of being assessed. Zava is easily distracted whilst researching as it "always happens" that he looks at other sites, specifically social networking, which impacts his work.

Zava feels he has adequate researching skills for researching online and was never taught how to use the online archives, merely told about them. He does not use them regularly; however believes that if he knew more he would use them more effectively and his research would be more rounded with quality articles that lecturers would want. Although the lecturers allow the use of the Internet they are often strict and more often than not require more than one source, saying that using the Internet is not enough, and so he would turn to his text books or class notes and articles supplied by the lecturers as opposed to entering the library.

5.4 Commons knowledge

The wide abundance of information found on the Internet has a direct bearing on the students' approach to research. They were asked to explain their relationship to this accessible trove of knowledge. In order to do this I explained the term "commons knowledge" which, as discussed in Chapter 2, refers to the Internet as an open or shared knowledge resource which is generally regarded as a positive feature of the information age because of its availability, variety and, in some instances, opportunity to be improved. This section will be split into three general sub-sections: firstly, students were asked of their general attitude towards knowledge as a commons, exploring their openness towards it and its usefulness. Secondly, how commons knowledge is integrated into their everyday lives and their personal usage. Finally, students were asked to expand on commons knowledge in relation to their academic work and the need for them to act with agency and take care when choosing information to use.

5.4.1 General attitude to Commons Knowledge

There was a definite positive attitude to the openness and abundance of information one is able to access on the Internet as it has "allowed everyone to have a voice". However a few of the students are aware that some people "do not have anything intelligent to say" and the lack of reliability had led them to be cautious. Many of the students after they understood what commons knowledge entailed found that they engaged with it more often than they realised.

Two very strong advocates of commons knowledge were Travis and Zava who believed that because everyone is so different it is beneficial that one is able to obtain more knowledge, there being "more [diverse] information available". The Internet has enabled individuals to upload their knowledge to "express [their] views and ideas" as there is a notion of "instant publishing" and there need not be any approval of work and it is easy and fast.

There seemed to be a few students who, although largely positive about the use of commons knowledge and the Internet, acted with caution for an array of reasons. Although they deemed it a positive attribute, Brent and Sindi both had mixed feelings as they felt it to be overwhelming and sometimes struggle to identify what is valid or noteworthy, however overall it was agreed to be helpful in simplifying complex issues. Alternatively Cara explained it to be a positive resource because of the "multiplicity of meanings" and "options" available which helps to broaden ones thinking to include topics they would not normally consider. She argued that ultimately it seems to be up to the "scrutiny of each individual" involved as the "onus is on the person researching" to be "careful how [they] use it" and they should use their discretion not to "blindly" accept what is written.

Some of the students mentioned using Wikipedia, possibly one of the most notable sites operating on the idea of commons knowledge. Although they were unable to use Wikipedia in their assignments, as instructed by lecturers, they felt it was a useful collaborative site as it offers one a broad synopsis of the topic or issues presented. Other comments regarding Wikipedia was it is "helpful" and offers a "general overview" of what they are searching for. Nicole was confident in the information on Wikipedia qualifying her answer by explaining

that they have a great amount of traffic on the site each day, therefore the chances of the information being corrected if it is incorrect are high.

By using articles classed as commons knowledge students felt it pushed and challenged them to think in a broader manner and to be open to differing opinions. One student felt that collaborative pieces were satisfactory enough for them, and uses them often, yet at a postgraduate level they should not use them as they are shown how to research using the online archive. Here the reasoning appeared to be that what matters is less if the argument is valid, and more whether the article concerned related to the topic. Students feel each individual is entitled to an opinion, so for lecturers to disallow the use is not productive; there should be no limits as it allows everyone to share, not limited to only academics. A student responded that whilst it is difficult to tell what is valid or not the Internet is a useful researching tool once one discovers what is factually reliable and valid. Contributions by many to commons knowledge may eventually result in the matter being oversimplified. When using a book, the author's message is the only one and this remains constant.

5.4.2 Integration into their everyday lives

Many of the students use the Internet for numerous personal reasons, and without realising it incorporate commons knowledge into their daily lives. Some students use the Internet "all the time" for anything they need as it has become an integral part of their lives. Some of the common uses of the Internet for personal reasons were booking flights or bus tickets or holidays, finding directions, doing Internet Banking, sourcing company information from websites, checking the weather, reading the news and interestingly it is used, to a large extent, to self-diagnose when they are ill. As Mandy explained: if she needs to know something she will simply "Google it" as it has become "a way of life".

Travis, through accessing the Internet, finds it to be a "part of [his] life" as it is easy to understand and helps him to remain "up to date with the Internet" and if he has to "go a day without it, it is hard". Zava feels that "the Internet is always the answer, most of the things are there" that one would look for, therefore convenient and easy. With the advancement of

technology many of the students questioned have Smartphone's, which have the ability to be continuously connected to the Internet. Robert utilises this feature of his Smartphone to help him answer questions he has or like many others to self-diagnose. Tanya also relies on the Internet and her Smartphone "a lot" to research something "quick" and if she runs out of bandwidth on her 3G card it is "panic stations"

The Internet is such an integral part of Nicole's life and she depends on it so much that if the electricity at home was out she would not "know what to do". For Sindi she is either researching or communicating with friends online as it is a "quick and cheap" option for her.

The Internet is not a purely academic resource; there is a carryover effect of research use into everyday life. Students were asked what some of these uses were. Businesses, nowadays, seem to operate by using websites and so users will contact organizations online or book their travel arrangements. The reasons students give for the use of the Internet in academia is due to it being an integral part of their social lives; that it is an easy, streamlined process which is accessible from anywhere, thus saving time, validating why the Internet comes first throughout their lives.

5.4.3 Relation to academic work

As the Internet is so deeply integrated into their daily lives it was only a natural progression that it was incorporated into their academic work, which is where the interview conversation progressed to. As all of the students use the Internet for both academic and personal research they were aware of the benefits and limitations and how they should research on the Internet. The students find the Internet speeds up the time they take to access information and "not having it would mean more time in the library" researching.

Cindy feels that "experience can tell you a lot" and can help to choose what to use; however there should be some form of "regulation". If she did not have the Internet it would be a "big adjustment" for her as she uses the Internet for the "convenience factor" and because of how

she gathers her information, as other “sources take longer”. There is a positive aspect to the simple or non-technical explanations available which for Mandy is “good for people who can think for themselves”; those who do not “think logically, then won’t do well” in their research and assignments. Luke although “not an expert” will use the Internet as much as possible, yet is aware of over simplifying a term so much it loses its true meaning. Robert is confident in his researching ability and feels through experience he is able to decide what information is good and valid and separate it from what is not as one “cannot take all articles at face value”. Although the Internet, for most students, is an “integral and beneficial” part of their studying and research process, Scott knows to question the articles uploaded. Where students do not feel confident in the content they have found, they will cross reference the information to make sure if what they read was valid and accurate.

With the Internet being so easily accessible and fairly simple to use, more ordinary individuals are uploading and collaborating their ideas to create “commons knowledge”. The students were asked if they thought the abundance of information was either positive or negative to their academic work. Students found many articles to be good as it allows one a different perspective and to obtain more knowledge due to the diversity of those submitting articles, Wikipedia being an example. Through the use of collaborative sites such as Wikipedia there are enough users and readers that if the information is incorrect it can, and will, be changed. Thus, the onus is on the user to apply discretion when researching. As they have basic class knowledge they are able to cross reference work to make certain they understand and agree.

5.5 Conclusion

This section has focused on conversing with third year students through in-depth interviews to get a deeper understanding of how they research for academic purposes. Even though they take different paths some students follow the accepted research procedures far more closely than others. The individualising of strategies for knowledge acquisition seems to be something that the arrival of the Internet has made possible. Students varied in their approaches to learning and each was confident and comfortable with the techniques they had acquired. The overall impression from the students is that the Internet seems to be the most

popular choice of source and a good starting point from which they are able to widen their search once they have an over-all understanding of their topic. The Internet is always available in the form of mobile connections from Smartphone's or laptops, access from home or access at University in the LANs, so it is accessible to them wherever they are. The Internet being utilised as a source of research and learning is becoming increasingly subject to integration into everyday life and therefore to demands such as convenience. Students seem to favour the online learning environment over the traditional library. Even though many explained that lecturers preferred the use of the library on-campus, they tended to follow these instructions by merely using the library only occasionally, gaining the minimum required and then obtaining the remainder of their references from the Internet. Interestingly it was largely through independent individualised learning via trial and error that this group of students learnt how to use the Internet. This self-exploration could explain their self confidence in their use of the Internet or the differences in usage. This confidence may be due to the Internet not being simply an academic tool but used in all aspects of life.

Chapter 6: Lecturer Results

6.1 Introduction

The preceding chapters described and summarized the data collected during the primary phase of this research and focused on student use of the Internet. As Lievrouw points out, however, the reconfiguration and remediation of communication always takes place within a social context which influences and structures this process. The social context in this study is the University and, although my primary focus is on the students, I decided to extend the research to include a series of interviews with lecturers and one librarian who, as more powerful figures in the academic environment, would be able not only to provide some commentary on how they believed the Internet should be used for academic purposes but also gauge the extent to which they make use of the Internet. The aim was to identify how Internet aware or savvy the lecturers were and whether they found the use of the Internet acceptable for research purposes. This analysis could then serve to highlight any discrepancies in the uses by academics and students and to consider how such differences might be bridged in order to create a harmonious academic researching environment.

The seven lecturers and academics approached were, like the students discussed in the first phase of my research, all from the Humanities and Social Sciences. These lecturers were sourced from the subjects that seemed to be the most prominent in the sample of students questioned and who indicated that they were willing to share their experiences of the use of the Internet as well as their opinions. As described in my methodology, the lecturers were interviewed electronically. This was because they felt it was better suited to their time constraints and they were able to consider their answers more carefully.

6.2 Lecturer perspectives on the academic use of the Internet

With respect to the lecturer's use of the Internet, a core requirement for all academics at the University is that they produce original research; indeed, the formal expectation is that they spend 40% of their time on research and, depending on their level, achieve a specified annual

research output (see appendix F: Research policy regarding developing, retaining and rewarding research). The lecturers were asked if they used the Internet to conduct their own research and where they go to find their desired information. The staff interviewed unanimously answered that they use the Internet to access academic literature, mostly journal articles. One lecturer added that he actively ventured to “new sites and opinion pieces” for background information when researching for academic works.

The manner in which lecturers utilise the Internet seems to be in the same general way as students, as they search for “discussion forums” and to “locate solutions to problems” that may arise for them by doing a basic Google or, alternatively, a Google Scholar search. Lecturers, like students, use Google for accessing online information as well as for more general purposes such as locating “books, films, and series”, acknowledging the vast array of information available. As one staff member put it, unless they are looking for specific research, he and his colleagues make “frequent use” of Google and Google Scholar to access information for both personal and professional purposes.

Another lecturer explained that he uses the Internet “extensively” and accesses the academic databases to find relevant papers as well as “blogs and current affairs websites” to expand his own database of knowledge. In addition, other services that the Internet offers, such as e-mail and the Dropbox facility, are used to collaborate with international colleagues, not limiting themselves to one culture of thinking. The Internet has been integrated into his entire career and constitutes a vital part of his work and as a result he appeared the most knowledgeable as to how students utilize and integrate the Internet effectively into their University careers. Indeed, to generalise, my interviews showed that the academic staff at the University use the Internet in a similar way to the students for both academic and personal research. If there are any lingering views suggesting that lecturers prefer to use older methods of research, my sample of interviews clearly suggested otherwise.

The lecturers were asked whether using the Internet has changed their personal approach to academic research, to discover if lecturers since using it in their personal lives have filtered the use into their academic work. It was interesting to note that many of the lecturers

questioned did not have as diverse a range of information available to them when they began researching, yet now are avid users of the resource. All of the lecturers are enthusiastic users of online researching and explain how the Internet has changed their personal approach to academic research. Their use of the physical library has decreased dramatically as the Internet offers a digital storage device for academic papers relevant to the users which is properly organised and easy to access and use. One lecturer explained how the "search capabilities" of the Internet have opened a large amount of "literature and work that was previously inaccessible" to all. The Internet provides a variety of resources and a diverse information pool that is facilitated by search engines such as Google and Google Scholar which allow for information flexibility, as you are able to search the entire online information pool, which lecturers have found useful.

As explained by one academic, the Internet has supported the move from the "purely academic" printed texts, such as books which are "available through the mainstream publishers", to the online realm where there is a lot more information available, even ephemeral sources such as blogs which students use. Another academic staff member explained that the "scope and range" of electronic sources, either academic or non-academic, has made it easier to search and conduct research from anywhere. Like the students, the lecturers find the ease with which they are able to obtain the online version of an article or book a positive as it is easier to "compile research reports" and recall them at any time. Moreover, if one is working on a journal article or research paper and needs information fast they are able to look and effortlessly access it online and not wait to see if there is a suitable printed version in the library.

Even though the lecturers all use the Internet for researching, they are still cautious and as with all research make a conscious effort to check the credibility of the sources before adding them to their research.

The Internet has grown at a fast pace and so too has the number of technological devices from which you are able to access the online sphere. Many of the new devices are portable and further facilitate the ease and speed at which one is able to access the articles or information. Therefore it is no longer just a conventional desktop computer being used.

Below are a few examples of the ways in which academic staff access the Internet. Lecturers were questioned as to where they access the Internet to determine whether it is mobile access or whether they tend to only go online when at a fixed desktop computer. Almost all of the lecturers have laptops which they use for University work as they are able to transport them home or to meetings with them, however there were two lecturers who still use desktop computers. When these more conventional sources are not being used they turn to their cell phones, mainly Smart phones or tablets, to browse the Internet. One lecturer explained that using a mobile device besides a laptop is not as easy as a traditional computer as the screen is too small to read an article easily, making it for him an impractical tool for Internet research.

6.3 The changing of Knowledge Production and Dissemination

As active users, the academic staff realise the ability of many to add to commons knowledge, along with the loss of hierarchical structure in knowledge production and dissemination. The academic staff were asked if they agreed with various opinions as detailed below. The lecturers were asked whether they feel the Internet and the resources it has available are changing the nature of knowledge production and dissemination.

The lecturers were, on the whole, open-minded and understanding of the student's constant use of the Internet for gaining information as it has become normal in the lecturers' daily practices as well. The lecturers themselves said they used the Internet and the various "services" provided, i.e.: email, Skype, wikis, social networking, all of which have been easily integrated into their technologies, be they mobile (laptops, smartphones, tablets) or fixed (desktop computers). The lecturers are fully aware of the integration of the Internet into student's daily lives; this has caused them to assess the availability of information and the ease with which one is able to upload information or create "new knowledge". One particular lecturer wrote that the Internet is "changing mainstream knowledge centres" making it even more difficult to assess the "conventional academic credibility of online sources", which is vital to producing sound academic arguments. Additionally, another lecturer claimed that "academics are less 'loyal' to particular journals and are now forced to read more widely" than ever before because of the Internet being used so extensively.

As stated before the Internet is interactive and available to any user with access to an Internet connection therefore there is no limit as to where and when knowledge is produced, by whom and, which users then interact with that information. The Internet often draws interactive users wanting to enhance their understanding or thought processes supporting an idea as they are able to read other blogs or discussions. One particular lecturer understands that this is practiced by her students, (a fact confirmed in certain student interviews) as it is one of the benefits of using the Internet afforded to users; however her continuing concern is the compromise in the quality of knowledge being produced as it is full of opinion.

6.4 Lecturers' attitudes to students using the Internet

The following section asked the lecturers if they encouraged or discouraged the use of the Internet. Opinions varied for different reasons with most (6) academic staff members expressing reservations when students used the Internet as there is so much available. Lecturers were unsure whether students would be discerning enough to know the difference between what is reliable and what is produced by an individual without adequate knowledge of the topic. There were lecturers that encouraged its use for assignments, but warned their students about plagiarism and the trustworthiness of the sources they may find, directing them to be discerning regarding the information, preventing incorrect information use which would be to their detriment when their assignment was evaluated. Alongside the cautions, students are penalised if there is no bibliography for the lecturer to verify the sites and articles which the students use. Also, within the bibliography some academics expect to see other sources so that a student's work is not exclusively researched online. One lecturer guided students to use Google as an information resource but to understand that not all information on the Internet is academic, reviewed or verified. A lecturer explained that as much as she wishes she could actively encourage the use of the Internet for academic assignments, she feels students do not possess the necessary skills to determine what information is useful and tend to use blogs and non-academic sources, therefore she actively discourages it wherever she can; however she is an isolated case as other lecturers are attempting to embrace the change.

The opinions as to use of the Internet by the lecturers and the ways in which they allow students to use the Internet vary, which aligns with the student's view that not all the lecturers

are the same. Some of the lecturers had a more positive view of the Internet than others, even though it was a small sample; there was a fairly balanced representation of different subjects. Regardless of personal use and preference all the lecturers are aware of the role the Internet plays in academic research within the University and agree to accept the use of the Internet in academic work if the students use it correctly and it is properly referenced and cited.

The Internet is viewed as having both a positive and negative impact on the quality of work produced by students due to the constant and abundant availability of online resources. The constructive properties of the Internet allow for "easier and faster" researching as well as a "vast range of information resources", although the "quality of the resources may leave much to be desired". Much like the printed (hardcopy) text, students still need a certain level of basic understanding to evaluate and discriminate between the "valuable and the not so valuable" as the Internet offers a remarkable variety. This skill is imperative yet may take time to acquire, cross-referencing potentially being the best solution. A comment was passed regarding students work quality and the lecturer explained that "good students tend to produce good work irrespective of whether they had the Internet available to them or not", which further reiterates that the skills of discernment are vital.

The Internet does not require any prior knowledge of the desired topic as users are able to insert key words into the search box for what they require and then easily scan through the results for what they need. A lecturer expounded the view that using the Internet has caused a "lack of critical thinking" by students of what they use and "what they get off Google" and found many students' use the Internet as their sole source.

The lecturers were asked about the overall availability of online resources and whether it has had a positive or negative impact on the quality of the students' work. One a lecturer lamented that the "hypertextual and summative nature of information online" has not developed critical thinking among users as their ability to process information for themselves without the aid of summaries has been negatively impacted. Due to the diverse nature of the society in which this research was conducted another staff member explained it would be difficult not to acknowledge the various backgrounds that students come from as it plays a definite role in Internet use. If there was a "proper grounding at high school" lecturers would

not have a problem with how students use the Internet or explaining what they require them to use on the Internet. However not all students have been in contact with computers let alone the Internet until University and this implies the need to start from basics. Perhaps due to the lack of consistency in the ways students are taught to research added to there being a general "lack of information on how to search for credible material". Academics felt many students lack the understanding of how to discern between "genuine and inauthentic sources. One lecturer with a definite positive, encouraging, attitude explained that using the Internet is able to "improve the amount of information that [the students] can access and makes accessing it easier". Alternatively another lecturer seemed to be hesitant to give a definite response saying that using the Internet is both encouraged and discouraged as it is "positive in terms of research" whilst being "negative in terms of plagiarism and lack of critical thinking".

While each individual no doubt conducts Internet searches in their own way, it does seem sensible for students to be given guidelines as to where one should start and what is helpful. The lecturers were asked what they recommend when researching online. Each individual researches in a different way; lecturers are aware of what their students use and one cautions that if her students "use Wikipedia, [they should] use it only as a starting point and use the references in the article to explore the topic further". Other lecturers guided students to more credible academic sources such as "Jstor or swetswise" as a starting point. Yet another lecturer explained that for him it depended "on the knowledge of the student and the particular research topic" as to where he feels they are able to research effectively. Although he encouraged the use of the Internet another lecturer stated that students should "be wary of the credibility of online sources and [should] use the Internet as one location of information and not the sole location" while another persuades students to take "careful note of the source and quality of the information presented".

Of the lecturers interviewed, five explained that they provided the students, who wish to research online, with very broad, generic rules. Lecturers offer some suggestions to students when researching online, similar to accessing other research sources. One of these suggestions consisted of using four basic steps. Firstly they suggest searching for the "topic area" or broad idea around which their research will be based, and looking through basic definitions and explanations to ensure a good understanding, and then search for major

writers in the field or researchers and “proponents of the topic area” if they know who they are. Next they suggest searching for “bibliographical references for the work” these writers have produced and finally then searching for journal articles, books and research papers. A second lecturer suggested a rather different approach. For him there are no specific rules set as usage will depend on the knowledge of the students and the topic they are given. The initial aim is to get as much background information as possible, such as Wikipedia and other encyclopaedias or “specialised weblogs”, “educational websites” and “news sources”. Only after the initial “foundation” or understanding of the information has been reached should one attempt to find journal articles as they would better understand the content. A lecturer was open to the use of the Internet as long as sources were “always properly referenced, regardless of the medium of the publication”. The two suggestions both start with advising students to conduct a broad search to provide them with a good understanding of the topic. The first example then uses bibliographical references to writers, their books and journal articles. The second omits the search for writers and moves straight to journal articles.

There were only two lecturers out of seven who felt the library should be a definite starting point whether scouring the shelves for books or asking the subject librarians if they could recommend any good books or journals. However, these lecturers were open to the idea that students use the Internet and that access to the library is not always possible. If students wish to use the Internet as their source of information then they are encouraged to look for peer-reviewed sources which should “always be given more weight than non peer-reviewed publications” due to their credibility. As a result of their scepticism regarding Internet use, these two lecturers feel that to be safe, if students wished to use the Internet it should not be their sole resource but merely one research location. As one is able to find books and journal articles online that are available in a library, the Internet does contain reliable information, yet there are also websites and wikis which are not regulated about which lecturers caution students.

The lecturers feel that to a certain degree the Internet has made plagiarism a bigger problem. Students, or users, are able to access more material online such as dictionaries and easy explanations, but due to this ease of use it opens the likelihood of “academic dishonesty”, more commonly known as plagiarism. Each academic staff member was asked if the

increased use of the Internet has made plagiarism a bigger problem than previously and whether they use electronic programs such as *turnitin* when students submit their work. Even though plagiarism existed before the Internet it is easier to plagiarise with the copy and paste facility; so to try and control plagiarism there are usually rules set to create uniformity, even though as noted through the previous explanations uniformity within the Humanities does not seem entirely evident as each lecturer has their own rules. The academic staff is scrupulous about plagiarism and the use of work that is not one's own; and adhere to the rules set by the University and its intolerance thereof. The lecturers find themselves being "meticulous" when checking assignments and reference lists to identify students who are plagiarising to attempt to curb plagiarism. Lecturers adopted guidelines such as a good, comprehensive compulsory bibliography to encourage best practice among students when researching. One lecturer was confident that he has a "fairly good idea as to when students are plagiarizing and this is invariably confirmed when [he checks] using Google".

The Internet continues to develop and it is unlikely that lecturers will be able to prevent students accessing it; therefore they need to find a way of controlling its use. Even with rules set by the lecturers for their respective courses, there will always be students who deviate and there need to be ways to penalize them when they are caught. One of the ways to judge if there is plagiarism is through a program, *turnitin*, which is used to filter assignments.

Various subjects within the Humanities use *turnitin* to filter assignments that are handed in; even postgraduate students need to present a *turnitin* report when they submit their theses. Not all lecturers or departments use *turnitin*; however they are cautious about students using the Internet and rely on their own academic knowledge to decipher when a student has not used their own intellect as often their writing style reveals they did not use their own words. Through the digitization of articles and information it has indeed become easier for "digital copying, cutting and pasting". One particular lecturer explained that her subject "does not have the time or administrative support to implement *turnitin* on a large scale". A rather sceptical lecturer explains that sometimes the program can be "manipulated by students who know how to use the program" and therefore is not always totally reliable, yet this would not be the case for every assignment.

6.5 The Internet shall remain

As the Internet is only going to continue growing, lecturers were asked to offer recommendations as to what should be done by the University and staff to improve understanding. One lecturer proposed that, ideally, it should be compulsory for students to use traditional media, to enable them to identify “credible texts”. Guiding the students slowly from print to the online realm of researching will help students “identify credible texts from illegitimate material”. Should students choose not to use the library they essentially need to be trained in how to search correctly; “it's a process which needs to be taught”, said another lecturer, expressing that students should be guided as to what key words to use, and regardless of the source the “quality of information” always needs to be considered. This lecturer further iterates that even with an objective to explain to students how to research “this is not done” and “it’s not surprising that students are currently unable to navigate online sources correctly”.

In order to simplify the departments’ requirements of students regarding the Internet and its use, one lecturer explained that it would be a beneficial addition to the academic curriculum for there to be a “compulsory module”, offered to all students, dedicated to showing them how to research correctly for academic purposes. This would create uniformity from the outset by covering issues of “plagiarism and citation, efficient and effective information searching in an online environment” to curb the problem of senior undergraduate students being unsure of researching. Additionally another lecturer endorsed the need for a compulsory module covering the issues of plagiarism, citation of articles and how to search through the many articles “efficient[ly] and effective[ly]” and how to develop a more critical approach towards information they are offered through the Internet. Six of the seven lecturers were in agreement that there should be some form of structured course for students to create an awareness of how to use computers and the Internet from their first year. However, they felt it was not up to them in their subjects to teach them and take more of a guiding role to researching. While individual lecturers could take it upon themselves to inform students of how to appropriately use the Internet as a source, another lecturer suggested the University should develop an “umbrella policy” for the use of the Internet in research as not all lecturers will inform students in the same way and there must be consistency on how to conduct searches in more difficult or “formal databases” regardless of the “lecturer or department”.

The lecturers showed a solid understanding of the Internet through their personal use and integration into their academic environment. Many of the lecturers using their own knowledge of the Internet understood the reasoning why students tend to use it for their research. Ultimately lecturers understand that students use the Internet and feel that how they obtain their information is a personal preference that would be difficult to change. However, there are criteria and requirements that the lecturers have set and they believe these should be adhered to, otherwise the students are penalized; likewise if the information or website used is not valid or reliable the students will forfeit on their results. It is the final result of the information presented in an assignment which lecturers are concerned about. They will question the actions of students when the standard of the assignment is not met as they themselves use the Internet, and know full well what can be found through correct and careful research.

6.6 Conclusion

The suggestions by lecturers regarding how students should be researching are similar throughout the Humanities and Social Science subjects. Lecturers, through the standards they have and the guidelines they offer students, have helped to shape the academic environment and the ways students use the Internet for research. However, these guidelines should be standardized and as mentioned in this chapter should be offered as a University course in order to ensure all students are at the same basic level regardless of their background.

The progress and acceptance of Internet usage by academic staff is evident through how they express their guidelines for students. They were united in their desire for a uniform research method across the disciplines to ensure that should students use the Internet they are doing so to derive maximum benefit from recognised sites, in the most productive manner.

Chapter 7: Conclusion

This research project was inspired by an honours dissertation which looked at Wikipedia and student use thereof. The results of that project generally showed that lecturers did not encourage the use of Wikipedia and even, to some degree, discouraged the use of the Internet for University work. On the other hand, it was equally clear that the students were increasingly relying on on-line resources for their work. Hence, the aim of this research was to analyse undergraduate student use of the Internet in an academic context where such use was, at times, frowned upon. This project explored the nature and use of the Internet as a researching tool by students while considering the limitations set by the lectures. Furthermore the purpose was to highlight the understanding, by informing all users, academics, students and lecturers, of the on-going changing nature of the negotiation and production of knowledge in the digital age.

In order to achieve the overall aim, I looked at a specific sample that I had an affiliation with – the University of KwaZulu-Natal, Pietermaritzburg campus. Within that campus I looked exclusively at students and academic staff working in the humanities and approached a range of subjects within this field of study. The students who were approached were limited to only third year students, as my initial hypothesis was that they would have the most advanced research methods in comparison to junior years. The seven lecturers who agreed to answer questions in this research project were interviewed as a secondary phase to the overall research, as the primary focus was on the students; however it became apparent the lecturers needed to contribute their practices and opinions to determine if there was any correlation between their response and those of the students within the same subject. The number of students who fully completed the questionnaire was 100, whilst the in-depth interviews were attended by only 15 willing participants.

Leah Lievrouw offered an applicable idea upon which I was able to structure this research project as it is a current theme for the use of the Internet as a research tool. Lievrouw argues that new media ought to be studied as a “combination of material artefacts, people’s

practices, and the social and organizational arrangements involved in the process of human communication" (2011; 15).

Lievrouw's statement offered me a useful way to break down my research into three parts: material technologies, people's practices and the social and organizational arrangements, all of which provided a useful conceptual framework within this project. Material technologies, in this context, looked at the information explosion brought along by the Internet through the development of Web 1.0 to Web 2.0. More specifically the material technologies of the Internet looked at the networks that have developed and the hypertexts within these which have become useful in linking users to information with a similar idea. The Internet has become a global information dissemination and researching tool, allowing users to contribute and access the information immediately. Technology has made great advancements to assist users in obtaining their desired information as soon as they need it. Mobility of the Internet has been a grand development as most users of the Internet are able to access it through their mobile phones, tablet or laptop.

Users, in this instance the students, have learnt to tailor their use of the internet to suit their personal individual practices. The notion of activist media encourages the participants to be more active in their use of the Internet and the information they use in their research assignments. Students, as they are faced with this abundance of information, are forced into being discerning about the information they use in their projects. The Internet has enabled users to be collaborative in their use, adding to one another's articles, which is another factor to be considered when students are researching, that they can discriminate between opinion pieces and what is academically factual.

The institution, in this instance the University, plays a great role in what students use as well as how they use the information. The University is seen as a structured information environment where students are able to access the library to obtain printed texts as well as offering the online resource of the Internet. Students through their individual practices have a sense of agency to decide what is appropriate, useful and reliable; yet this individual agency is institutionalized as students have to conform to the criteria set not only by their critiquing

lecturer but also the University. There is slight tension regarding acceptable Internet use between the lecturer and student and measures have been put in place in an attempt to curb the number of students who fail to comply with the basic research regulations such as plagiarism. Plagiarism is of great concern to academics within the University as the Internet has made it much easier for students to copy-and-paste without much effort; as a result many subjects have employed a program called *turnitin* to scan the assignment in an attempt to highlight all phrases that are not the users own words.

The practical application of this research project began with questionnaires which were designed to obtain a broad overview of the student's uses of the Internet as well as form an understanding of their previous use and how that has developed, shaped or refined their Internet use at University. The questionnaires were also able to highlight those students who had no access to the Internet prior to entering University and what affect that had on their research methods. The bulk of the students (84%) had used the Internet and computers prior to entering University, however very little of that use was for researching purposes, being mainly for e-mail and downloading. As the Internet has advanced and developed, so the students have grown accustomed to the changes. The platforms they use on the Internet have changed too, such as social media, collaborative databases and hypertexts. The majority (70%) of the students decided to take a computer literacy course at University, which shows students how to best use a computer's hardware and software; however it does not detail how to use the Internet for research using a computer as the medium.

While most of the students were from the Media Department there was a range of other subjects also well represented with Psychology, English and Politics being some of the most popular. Students at University are given the opportunity to choose between using the Internet or the traditional printed medium from the library; it was clear from this questionnaire that students seemed to always seek the easiest source of information; in this case 98% used the Internet exclusively. Furthermore, students sought to find the most convenient locations for their research. Easy Internet access aids students who are able to access the information and contribute to its significant use. The participants explained that if they were on campus they would use the campus Internet; otherwise they preferred to work from home if they had access as it was most convenient as students need not travel to

research. Significant use of the Internet by students arose due to technology providing relatively easy access to information.

The participants' initial use of the Internet developed from very rudimentary to being more involved and complex in their third year, with researching being the most popular answer (46%) followed by social networking, entertainment, e-mail and news; this use is not only due to students being able to constantly access the Internet from their preferred location, but also due to the introduction of Smart Phones, where the user has constant access to the Internet. Students were asked how long they spent researching for an assignment and the majority answered with 6 hours or more spent online researching through the vast amount of information. Students who used a combination of print and digital mediums did so because it was a requirement by their subject lecturer to have information from both sources, or they were unable to find exactly what they were looking for online and would then use a recommended book.

The participants offered the names of the search engines and sites they preferred to use when they researched for academic purposes. It was no surprise that Google was the most popular choice of pathway to relevant webpages as students were able to obtain a broad overview of the sites available and from there try to critically evaluate which would be the most useful. Google scholar and Google books were also very popular choices, which could suggest that students were advised to do a more in-depth search by their lecturers in a particular instance. The online archives, which are paid for by the University, are offered to all students on campus, however only a limited number knew about them or have used them in an assignment. Finally Wikipedia was the other popular choice of site for students; however students have been told they are not to use Wikipedia and explained they used the links at the bottom of the article to direct them to the source from whence the information came. There was no distinct correlation between the students who use Google scholar and the online archives which suggests either students' are using Google as their portal or they are going directly to archives such as Sabinet and EbscoHost. Of those questioned 44% of the students explained that they did not know about the online archives at all, however the remaining 56% found value in the archives and one felt strongly that it "should be compulsory" for students

to use the online archives. This would help to standardize usage and ensure that the most reliable and accurate information is being accessed in assignments.

The students highlighted academic criteria and instinct as contributing to their process for selection of information. These academic criteria are either set by the lecturers or by the students themselves as they use the same criteria each time they analyse information. Although having their own criteria was the most popular choice, personal criteria were all different. There is no standardising the way students research even between subjects where lecturers offer different research criteria.

Students were asked about their perceptions of how their different disciplines regard the Internet. Mostly students felt that the lecturers were open to the use of the Internet for researching purposes, however English and Philosophy lecturers were perceived as being less open to its use. The different attitudes of lecturers, as shown from their question responses, show the vast variance between the disciplines and possibly of lecturers within these disciplines, all of whom are in the Humanities and Social Sciences; however on the whole (69%) of students felt they were not discouraged from using the Internet. Although being allowed to use the Internet, students sometimes did this with trepidation as they were researching without guidelines of acceptability from their lecturers. Most of the students were offered criteria which were comprehensive and made it easy to understand what the lecturers accepted. In other instances, students felt the lecturers were vague in their guidelines of what comprised acceptable online research, while others simply gave hardly any guidelines.

The interviews were a necessity in this research as the questionnaire was designed to gather a general overview, however there needed to be a more probing dialog to derive more in-depth understanding of why students research in a particular way. Of the items discussed in the in-depth interviews the following stood out. The past and present uses by these students was very similar to those answers given on the questionnaire, however each individual began their use of the Internet at a different stage in their life: some junior school, some high school and 2 who only accessed the Internet for the first time at University. All of the students questioned were full time students with access to the Internet on-campus, however very few

used the LANs for various personal reasons and found alternative access, either at home, via their Smart Phone or from an Internet cafe or friends house. The amount of time students spent on the Internet each day varied greatly and was dependent on whether or not an assignment was due, as then their time spent online was more focused on the research for the assignment as opposed to general browsing of the Internet. Some of the students with access to the Internet outside of University, tended to leave their assignments to the last possible moment as they did not need to be on campus to engage in their research, which is possibly a problem with some of the students who use the Internet, as they may leave researching as long as they can.

Each participant was asked how they begin researching for an assignment and which resources they used. As the results of the questionnaires indicated that online databases were not a popular choice amongst the students it was decided to probe into this further in the interviews. The Internet for most of the students was their first research tool when doing an assignment, and more specifically Google. Students stated that they were able to enter their entire assignment topic or key words into the Google search box. From the results listed by Google they would scan through them to choose the most relevant site or a site they recognised, from which they were able to refine their search accordingly. Google Scholar was another choice by a few students, who found it more academically driven. Once a student had used their particular search engine to find the information they desired they would browse through the results to determine what was relevant to their assignment and open and skim read the information to determine if it was relevant and reliable, otherwise it was discarded and the next article or site opened.

There were students who went to either the library or their prescribed text books as their first research point, however all additionally used the Internet in their research. Most of the students seemed to find the Internet to be more diverse than the library or their prescribed books as they are able to use the hyperlinks to read articles on a related topic. The students were sometimes forced to use the library as it had been set as a criterion by the lecturers. The students still find the Internet more user-friendly and understandable as the information is immediately published and easier to navigate through; so even in an attempt by lecturers to force students to use the library, they still tend to use the Internet wherever or whenever

possible. If compelled to use the library, many students will go to the reserved books on short loan as they have been specifically chosen by the lecturers for that assignment. Students appear to attempt to find the shortest way of doing things and will use Wikipedia as a reference list to save them from going through the initial research process where they have to find the relevant sources. Students seem to use the Internet regardless of the criteria set and will often look for the online version of a book as opposed to sifting through the library, if they are instructed to use books. There remains a small minority of students who willingly incorporate the library into their research and will continue to do so through preference. The remainder of the students will always seek the most convenient way of researching.

The online archives, for some of the students, seemed to be less easy to navigate compared to other search engines. Those that knew a modest amount about them tended not to use them as they did not feel they understood how to utilise them effectively. Other students had never heard of the online archives and their lecturers had merely told them what not to use as opposed to guiding them towards the online archives. Lecturers advised students to attend a library orientation course in their first year; however this covers the basics of how to navigate the library and did not go into detail of how to research online. Best practice must, to some large extent, include comprehensive use of online databases for high quality information. It is somewhat disconcerting to find that various channels for communicating online archive availability, the advantages and high quality information were still unknown to students.

Most of the students interviewed felt they were never given proper instructions or advice on using the Internet, and were merely told where they can and cannot go on the Internet when researching academically. It has been through trial and error, self determination and time that they have come to learn how to use the Internet effectively and research online, even though they possibly do not possess what would be regarded as the proper skills needed for researching. The students rely on their own criteria and understanding of researching to determine what information is important and reliable. Some of the criteria are how high the article is ranked on a Google search, as the higher the ranking the more it is perceived as valuable. The article or site is evaluated upon the format, author, whether it is linked to an academic institution, peer-reviewed, sounds academic and how recently it was written or updated; these are regarded as evidence of how relevant it is. This understanding and attitude

could be altered by the academics, as they are able to offer more distinct recommendations. It is not necessarily about the date it was written or uploaded as some information and facts will never change.

Students, due to the restrictions placed on them; do not reference the works they use correctly. If students gather information that confirmed their idea then they will not reference that site. Additionally, some students mentioned they were not allowed to use Wikipedia but tended to use it regardless and merely do not reference it. This restriction being placed on them has possibly led the students to believe it is acceptable to plagiarise as opposed to teaching them the correct procedures in researching and referencing.

Lastly, the students were questioned about commons knowledge and how they felt about it as it is a main contributor to the Internet which they use for their personal as well as academic research. The consensus was that it is beneficial as it offers a simplified explanation and condensed view of a particular topic or idea. Wikipedia is an example, as it is, in most cases, collaboratively written. This may result in an overabundance of information, and sometimes opinion pieces can become overwhelming. Some students feel even though it is a positive attribute of the Internet (in allowing all users a fair voice) it can diminish or deteriorate the reliability of the information. The students have enough knowledge to understand that not everything on the internet should be accepted as accurate and they should be discerning and scrutinize all material they intend to use. Along with the notion that commons knowledge is useful, and the realisation that they use it more than they thought, they extended their examples to their personal use and how they use the Internet for commons knowledge. Examples included: self diagnosing illnesses, Internet banking, booking holidays and making travel arrangements.

The Internet has become an integral part of all the students' lives and most of them commented that they would not know what to do if their access to the Internet was terminated. The Internet is constantly evolving and more individuals are contributing to the online realm of knowledge. Even in their personal capacity on social media, this contribution and collaboration is easily extendable into the academic sphere with more collaborative sites

open to any user, not limited to academic knowledge. Students have become more familiar and comfortable using the Internet for researching purposes and have integrated it into their daily lives. Since they entered University they have had the Internet available to them along with a vast number of online academic archives.

Upon gaining insight into the students' use of the Internet for personal, and more interestingly, their academic work, it was determined that the lecturers needed to be questioned as a secondary function. The lecturers' answers and opinions were not intended to alter any findings, but rather to represent the institutional and social context, when correlating how they researched when compared to the students; in addition to obtaining an outline of their preferences and working practices for their students.

The lecturers were asked for their perspectives on the use of the Internet for academic purposes, as each of them is a researcher in their specific subject. Each of them explained they used the Internet to access academic literature, specifically journal articles. The lecturers continually scour the Internet looking for relevant writings to add to their collection to offer background information. The lecturers, as do all the students, use the Internet for personal matters as well, such as general Google searching, reading blogs, current affairs, e-mailing and downloading. As the Internet has become more integrated into some of the lecturers lives, they have come to understand how the students use the Internet. The use of the Internet for their personal work has changed their approach to their academic work, consequently they have become more accepting of it for academic purposes – possibly due to their experience and the knowledge they possess on the topics they are searching under. The search capability of the various databases has made it easier to search literature previously unavailable to all, as it has decreased the spatial and temporal divide associated with the traditional library.

Although the lecturers are open to the use of the Internet for academic purposes they are still cautious of their students using it as much of it is open to alterations by all users, regardless of their credentials. They are however able to easily and rapidly check information or find additional information to add to a research paper they are writing, as opposed to waiting to see if the library has a suitable book available.

The lecturers have acknowledged that the Internet is changing knowledge production and dissemination for various reasons, one of which is the integration of the Internet into almost everyone's daily lives. All users are now forced to read a wider variety of sources due to the vast availability of information; they are no longer limited to reading just the journals they are familiar with. Although the lecturers are open to the use of the Internet, they are wary of their students compromising the quality of information as it may become confusing having to navigate through various articles.

The various lecturers all expressed different opinions regarding their students' use of the Internet for their research as lecturers are not convinced students are as discerning when researching as they believe themselves to be. The only way the lecturers believe they will easily be able to determine if the information they read is true, is through experience and understanding of the topic they are reading about. The students were asked if their lecturers encouraged or discouraged the use of the Internet, as were the lecturers. The lecturers that said they encouraged the use, also offered warnings to their students about plagiarism and the trustworthiness of the source they are using. Some academics expect there to be other resources in their student's bibliography, not exclusively the Internet. One lecturer cautioned, and where possible discouraged, against the use of the Internet as students tended to use blogs and opinion pieces without knowledge enough regarding the topic to distinguish what is invalid. Other reservations regarding the use of the Internet included students not needing to use other resources, such as print media, to validate their conclusions as the Internet is constantly available. A lecturer explained that for them their hard working students tended to produce sound work regardless of the resource they used to gather the information as they often had the skills of discernment. One lecturer felt that good research practice is formed from the beginning of their research careers and they are able to determine whether the student has had prior experience or a solid online foundation; however in our society this is challenging as not all students have had access to computers or the Internet before University. Lectures are aware that their students use Wikipedia and try to guide them to other sites such as Jstor or Swetswise as a starting point instead.

The lecturers opined that students must determine their own criteria for researching depending on their particular style; yet feel that possibly guidelines should be given, and

sometimes are not. They offer general warnings, similar to those identified by the students, not to use Wikipedia, be discerning, and use the Internet as one but not the sole location. They guide students to researching the fundamental authors in the field, and ensure their bibliography is comprehensive enough for the lecturer to find the source again. As long as the work produced has been properly researched and referenced, the lecturers are satisfied. Only two of the seven academics felt that the students should begin at the library, however they were open to the use of the Internet provided the students looked for peer-reviewed works which are regulated.

Turnitin is the University's plagiarism detection software, however not all of the subjects and schools have this resource available as it is costly and they do not have the administrative power to operate it effectively. They find that a program such as this would be positive, as with the digital age students are easily tempted by the cut and paste option. These lecturers, who do not have such tools, have had to rely on their own knowledge and discernment of their students' work.

As the Internet will remain, lecturers offered suggestions that would be beneficial to all users within the University. One felt that the use of printed texts is still important as it would assist in the transition from printed to the online realm as students will be able to identify credible information. Another explained that there should be a compulsory course for all students to teach them how to research for academic purposes. There could also be an umbrella policy for all students to follow the decided guidelines of the specific school. Through this research project one was able to offer suggestions to the lecturers based on the questionnaire responses, as an overview. Each of the Humanities schools should develop an overall policy for researching and adhere to the standardized rules; if specific lecturers feel they need to add rules they should be able to add them to the set criteria.

Lecturers possibly need to be more open to the use of online sites, even Wikipedia, and if used incorrectly then students should be penalised. As with all research, it is left to the students' own discretion and if the work is wrong they should be responsible. Likewise, if students are shown how and where to access reliable works to the lecturer's satisfaction, then

they would possibly not plagiarise as they would immediately know where to turn apart from generic easy to use, collaborative sites.

Students would derive great benefit from a course in the layout and uses of the library in addition to a separate orientation in Internet use to help them refrain from immediately using generic sites such as Google, as students rarely take the time or initiative to ask about researching methods. Most of the students believed that it would be beneficial, not only to them but to lecturers as well, if they were taught how to use the Internet for researching in more depth. Even though it would take time away from lectures, it would be beneficial to the student's work, and the work lecturers receive, as well as improve academic research and assignments. If students could research effectively and gain expertise, they would possibly do extra or deeper research as opposed to a general Google search. There should also be an additional library course, or the current one could be adapted to include a very detailed and specific online researching section, more so than is currently presented. There was an overwhelming sense of lecturers taking for granted that students knew how to academically research both online and in books. It was only as a result of students taking specific courses that they learned how to research effectively. Students who have already completed researching courses still seldom made proper use of this additional knowledge. The Internet is fast becoming the future of all research and this new medium needs embracing, understanding and managing.

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Appendix A

New Media Pilot Questionnaire:

1. What are your Majors?

_____

2. Where do you live?

_____

3. Have you had any prior experience with the Internet before entering University?

_____

4. If yes, where?

_____

5. For what purpose/s did you use the computers and the internet?

_____

_____

6. Where did you learn to use a computer and the Internet?

_____

7. Have you done a computer literacy course?

_____

8. If yes, which course did you take? (ISTN, End-User computing)

_____

9. Where do you go now to use the computer and access the Internet?

_____

10. Do you currently use the internet for researching?

_____

11. On average how long do you spend researching an assignment before submitting it.

_____

12. How much of that time is spent online?

_____

13. How much research do you do using books, journals and short loan in the library?

_____

14. Do you have specific sites you always use? If so, what site/s are they?

_____

15. How do you select from all the information available to you on the internet?

_____

_____

16. Do you use the internet research archives that the University makes available? Eg: EBSCOhost, Sabinet, Proquest

_____

_____

17. Which subjects Encourage/ Discourage the use if the internet when researching?

_____

18. Do your lecturers allow you to use the internet, if yes, do they provide you with guidelines (please explain what these are)?

_____

_____

Thank You

Appendix B

New Media Questionnaire:

1. What are your Majors?

_____

2. Where do you live?

ON CAMPUS ☐ OFF CAMPUS ☐

3. Have you had any prior experience with the Internet before entering University?

YES ☐ NO ☐

4. If yes, where? (tick more than 1 if applicable)

HOME ☐ SCHOOL ☐ OTHER (ie museum or library) ☐

5. For what purpose/s did you use the computers and the internet?

_____

_____

6. Where did you learn to use a computer and the Internet?

At Home ☐ At School ☐ At University ☐

7. Have you done a computer literacy course?

YES ☐ NO ☐

8. If yes, which course did you take? (ISTN, End-User computing)

_____

9. Where do you go now to use the computer and access the Internet?

_____

10. Do you currently use the internet for researching?

_____

11. On average how long do you spend researching an assignment before submitting it.

_____

12. How much of that time is spent online?

_____

13. How much research do you do using books, journals and short loan in the library?

_____

14. Do you have specific sites you always use? If so, what site/s are they?

_____

15. How do you select from all the information available to you on the internet?

_____

_____

16. Do you use the internet research archives that the University makes available? Eg: EBSCOhost, Sabinet, Proquest

_____

_____

17. Which subjects Encourage/ Discourage the use if the internet when researching?

Encourage	**Discourage**

18. Do your lecturers allow you to use the internet, if yes, do they provide you with guidelines (please explain what these are)?

_____

_____

Thank You

APPENDIX C

In-Depth Interview Questions:

1. Internet Usage: (To get an overall picture of their past- determine the internet literacy they arrived with)

- Do you use the Internet? What for?
- When did you start using the Internet?
- Where did you use it? (Lan, home, phone etc- prompt for answer if not given)

2. Internet at University:

- What do you use the internet for now? (General and all uses)
- How much time do you spend on the Internet?
- Use of LANS? Do you have to use the LANS or not?(increased uptake of computers- provide programs people don't have at home)
- Or use at home or on phone?
- What do you do on the Internet? (broader picture within which research occurs)
- How do you use the Internet at University? What for?

3. University Work: (general use for research)

- How do you gather material for research? Why?
    - Lecture notes
    - Prescribed text books
    - Library (Printed Booked)- how do you find these books (key words etc)
    - Internet
    - If you do not understand something, where do you get your answers?
- What do you do when you do your own research? Basically how do you work outside lectures?
- For your own private work- how do you gather material for understanding?
- Do you have a part-time job? (does it impact your university work)

4. Internet for Research:

- How much time do you allow yourself for researching?
    - ✓ Purely online (Internet research) or library (print) as well? (How much time is spent researching? Of that how much online?)

- ✓ Do you come in to University to use the Internet? Or where do you access it?
- ✓ How many sites do you look at on the Internet?
- ✓ How often do you find yourself looking at other sites when you should be researching? Do you do more than one thing online at the same time? Do you think this affects your research?
- ✓ When do you stop researching?

- How do you start researching online?
  - ✓ What are some of the processes you go through? So, How do you use the internet… what are some of the steps you follow?
  - ✓ How do you choose what site you will use?
  - ✓ How do you choose what information is most important?
  - ✓ Do you feel you have the necessary researching skills required to research at a tertiary level, what are these skills
  - ✓ What do you know about online archives and sources on the Internet. (do you use them)
  - ✓ Why do you feel lecturers disallow the use of the Internet? Is it fair? What do you think they could do differently?

5. Expertise:

- How much help or advice have you received regarding the use of the Internet?

6. Commons knowledge: (explain it)

- This may be an advantage to using the Internet are there is a lot of information available- in your opinion is it a good or bad thing?
- Do you use the Internet for other issues you may face as there is a lot on offer? General day to day problems/

The Internet is not purely academic- there is a carryover effect of research use into everyday life.

- Do you use research in general in your everyday life?

Appendix D

In depth Interview Voice Recordings:

Refer to CD attached

Track 1:	*Abigail*	Track 2:	*Brent*
Track 3:	*Cara*	Track 4:	*Cindy*
Track 5:	*Joshua*	Track 6:	*Luke*
Track 7:	*Mandy*	Track 8:	*Nicole*
Track 9:	*Robert*	Track 10:	*Sindi*
Track 11:	*Shannon*	Track 12:	*Scott*
Track 13:	*Travis*	Track 14:	*Tanya*
Track 15:	*Zava*		

Staff Questionnaire **Appendix E**

The role of the Internet in the academic environment

I am currently engaged in masters-level research into how humanities students at UKZN use online resources for study and research purposes. But in order to achieve one of my research objectives – which is a set of draft guidelines that could serve as a guide for staff and students alike – I also need to gather information from a cross section of the academic and library staff. Only then will I be able to consider how we might best bridge the gap between the academic expectations of the lecturers and the actual practices of students.

I would be most grateful if you took a few moments to respond to each of the questions below, bearing in mind that my research is qualitative and so the more detailed your responses, the better!

Please be assured that your comments will be treated in the strictest confidence and any discussion of responses will keep all respondents anonymous.

1.	**Academic use of the Internet (online resources)**
1.1	Do you use the internet in your own research? If so, do you use it simply to access journal articles via the library's online resources, or do you range more widely in your searches?
1.2	Has the internet changed your personal approach to academic research? If so, how?
1.3	How do you access the internet – using a conventional computer (such as a laptop or desktop) or a more portable device such as a tablet or smart phone?
1.4	Do you think that the internet and the resources it provides are changing knowledge production? If so, how?

2.	**Student use of the internet**
2.1	Do you encourage or discourage your students from using the internet?
2.2	Do you think that the availability of online resources has had a positive or negative impact on the quality of your students' work?
2.3	What, for you, is the best practice for students to follow when doing online research?
2.4	Do you have any rules your students should follow when accessing the Internet for their University work? What are they?
2.5	(i) has the internet made plagiarism a bigger problem? and (ii) do you use resources such as Turn-it-in to filter assignments?
2.6	In view of the fact that it is highly unlikely that use of the internet is going to decline, do you have any suggestions or recommendations for how the university, your school or your discipline should act to improve students understanding and productive use of online materials.

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

DEVELOPING, RETAINING AND REWARDING RESEARCH (RESEARCH POLICY II)

Ref: CO/02/0405/07

Name of Policy:	Developing, Retaining and Rewarding Research (Research Policy II)	
Reference Number: (supplied by the Office of the Registrar)	CO/02/0405/07	
Originator/Author: (name and position)	DVC (Research)	
Custodian: (position/office)	DVC (Research)	
Policy approved by:	Structure: Council	Date: 04.05.2007
Policy effective date:	04.05.2007	
Policy review date:		
Implementation responsibility:	DVC (Research)	
Implementation procedures approved by:	Structure:	Date:
Policy to be monitored by:	Assistant Registrar	

RESEARCH POLICY II:
DEVELOPING, RETAINING AND REWARDING RESEARCHERS

"The best way to have a vibrant and active research culture is to appoint the right people in the first place. Once we have done so, we should minimise the obstacles placed in their way."

The Research Environment, ADM Walker (Document approved by the Senate of the University of KwaZulu-Natal, 2003)

1. Preamble

1.1 The strength and reputation of a University depends to a large extent on the quality of its research.

1.2 The University Council, the Senate and Executive, through their statements and actions, recognise and endorse the centrality of research and scholarship to the Vision and Mission of the University.

1.3 To make concrete this philosophy, the University invests significant funding in creating and maintaining a strong research ethos, in the nurturing of research and the development of researchers.

1.4 To support its research endeavours the University continuously builds a research support system, research administrative processes, financial and human resource policies and processes, which are non-bureaucratic, user-friendly and enabling. These will be administered by well-trained, caring support staff that shares the pride of the academic staff in the academic success of the University, and see themselves as contributing to it. All policies will be applied to and be supportive of the entire spectrum of disciplines in the University.

1.5 To meet its goal of being a pre-eminent centre for research and scholarship, UKZN attracts and retains identified national and international research leaders, foster those who have the potential to develop into research leaders, identify and nurture the next generation of research leaders, and broaden the demographic base of researchers.

In the appointment of academic staff, the University places emphasis on the research record (or, where more appropriate, research potential) of candidates, and seeks through such appointments to strengthen the quality of the University's research.

1.6 The future of the University depends on the pool of young researchers from whom future research leaders will emerge. The University works hard to attract such young researchers and addresses their needs so that it provides a suitably enabling research environment.

1.6.1 Mechanisms have been developed to identify outstanding young researchers within the University and to attract outstanding young researchers from other institutions.

1.6.2 Investment of time and money in the development of outstanding young researchers is a significant investment in the future of the University.
1.6.3 The University needs to ensure that the new generation of researchers is drawn from a diverse range of the population so as to address the deep race and gender imbalances that characterize the national research system.

1.7 To remain competitive as a research university, UKZN has policies and procedures in place to create and maintain a suitable research infrastructure: laboratory and equipment facilities, well stocked and maintained discipline specific as well as general libraries, a responsive reward system, a vibrant ethos and environment. This allows the University to retain its best researchers and those with the most potential.

1.8 To stimulate research the University invests funds to provide active researchers with the necessary funding for equipment and research infrastructure, to provide for their basic research expenses and to assist them to leverage additional external research funds.

1.9 As part of a nationally observed phenomenon across most disciplines, the University will be losing a large number of active researchers through retirement during the next few years. This underlines the critical need to develop the next generation of researchers.
1.9.1 Active, retired researchers are a resource that the University can draw upon to assist in nurturing and developing the research leaders of the future, as well as postgraduate students.

2. Objectives
The objectives of the policy are to
2.1 Enhance the standing of the University as a first-rate research institution and the premier centre of African scholarship and research.
2.1.1 Establish a critical mass of expertise with active postgraduate and research schools centred on nationally and internationally recognised research leaders.
2.1.2 Derive maximum benefit from the strategies of the National System of Innovation, from international research funding organisations and Department of Education funding for postgraduate students and research output.

2.2 Attract outstanding young researchers to the University, develop those at the University, and grow them as the next generation of leaders in research and scholarship in order to broaden the research base of the University.

2.3 Diversify the research base of young researchers through policies that address, in particular, the needs of researchers from under-represented groups.

2.4 Attract to the University, and retain, research leaders.
2.4.1 Provide an environment in which they can flourish as researchers, and gain in stature, internationally.
2.4.2 Benefit from their expertise to assist in research capacity development.

2.5 Establish an internal research funding mechanism that provides appropriate support for active researchers and enables them to leverage external funds. The mechanism should reflect their productivity in a transparent, efficient, effective manner with a minimum of bureaucracy.

2.5.1 Provide suitable research funding possibilities for new staff, for early career staff and for staff who are resuscitating their research activity.

2.6 Provide for the continued research involvement of active retirees, and establish mechanisms for the University to benefit from their accumulated expertise in research and in research capacity building.

3. Environment and Infrastructure for Research

3.1 Principles:

Research flourishes in an environment that is conducive to research.

3.1.1 An environment that encourages research is based on a strong research ethos, driven by the academic staff, the Senate and the Executive, and accepted, endorsed and implemented by the University Council, management and support staff.

3.1.2 Research and other creative activity are nurtured by an administrative environment that concentrates on being supportive and enabling.

3.1.3 In particular, the administration of research policies, and the administrative support offered to the research community should be efficient, effective and user-friendly.

3.1.4 Quality research requires significant infrastructure in the form, for instance, of libraries, computer facilities, and equipment, as well as technical and other support staff.

3.1.5 University research is dependent on a cadre of research-oriented students and postdoctoral researchers.

3.2 Policy:

3.2.1 The University is proud to have built up a research ethos of considerable strength, and through its actions will continue to strengthen it further.

3.2.2 The University recognises the importance of reducing bureaucracy in its policies and their administration and takes active steps to ensuring that policies are supportive and nurturing rather than obstructionist. The effective, non-bureaucratic administration of these policies is enhanced by staff training and recognition of the importance of quality support staff.

3.2.3 The Research Office is intent on developing further the efficient and effective administration of research policies, and to provide appropriate personal support and advice to researchers in their efforts to secure external research funding, and develop their research productivity.

3.2.4 The University already invests, and will take action to grow its investment in, the infrastructure required to support the research endeavour.

3.2.5 The University recognises the importance of developing a strong group of potential researchers amongst its undergraduates and postgraduates, and seeks to enhance that through its selection policies, its teaching and the ethos, environment and facilities that it offers students.

3.2.6 Recognising the importance of postdoctoral researchers to its research activity, the University has established and will grow its Postdoctoral Fellowship scheme.

4. Policy Mechanisms for Developing Young ("Early career") Researchers

4.1 Advising/Mentoring

4.1.1 Principles:

Young researchers need a nurturing environment and a system of support in the early stages of their careers. The term "young" is deemed to include "early career" researchers, i.e. older researchers who join academia relatively late.

4.1.1.1 The implementation of a mentoring (advising) system will provide all new staff with an appropriate induction to University procedures and processes and an ongoing supportive framework.
4.1.1.2 The advising should cover not only the research process, from conceptualisation to publication, but also provide support in terms of development of research proposals and applications for grants and mobilisation of research funds, mobilisation of funds, exposure to researchers of high standing, opportunities for networking, etc.
4.1.1.3 It should be noted that even established researchers, particularly if joining the University from outside South Africa, benefit from some advising, so as to facilitate their entry into the University system and the national research system.

4.1.2 Policy:
4.1.2.1 Heads of Schools, Deans and the Executive all have a responsibility to support and develop young researchers, and all new staff should get appropriate and effective induction in respect of research matters.
4.1.2.2 An advisor should be appointed for each young, active researcher. An advisor should also be appointed for a newly-appointed established researcher, where the Head of School deems it to be appropriate.
4.1.2.2.1 The advisor should be appointed as soon as an appointment is made, so as to ensure that opportunities for funding applications are not missed, and that any other research-related problems or queries can be dealt with quickly.
4.1.2.3 The advisor would normally be appointed by the Head of School after consultation with the advisee (where appropriate), and/or discipline Head. Advisees have the option of switching to a different mentor once they have had time to interact with staff.
4.1.2.4 The advisor should have the ability to interact and communicate, and would preferably have the necessary expertise in the advisee's research field/discipline. An advisor could be a senior staff member, or an active retired staff member (Senior Research Associate). Mentors need not necessarily come from the same school as the mentee.
4.1.2.5 The mentorship role would normally be a voluntary one. However, an incentive of productivity units will be provided to mentors in the first year of their mentorship role. The size of the incentive will be determined by the University Research Committee, and set at a level to encourage more researchers to take on this role.

4.2. Recognition/Appreciation

4.2.1 Principles:
Recognition or acknowledgement of progress and achievements is an important incentive for researchers.
4.2.1.1 Such recognition is not restricted to, but may include, financial reward expressing the appreciation of the University, awarding time, and generally providing a supportive environment.
4.2.1.2 The creation of formal opportunities for recognition by the University is to be encouraged.
4.2.1.3 The establishment of a personal link between a young researcher and the Research Office and research management is important. The Supervisor can be extremely helpful and supportive in this.

4.2.2 Policy:
Recognition may be given to researchers in the following ways:

4.2.2.1 Acknowledgment of achievements by researchers (e.g. awards at conferences, medals for best paper, etc.) in the form of a personal letter from the Research Office or DVC (Research, Knowledge Production and Partnerships).
4.2.2.2 Publication of research achievements in a University newsletter.
4.2.2.3 Recognition by the University of NRF-rated academics, particularly of those receiving a P-rating.
4.2.2.4 An annual meeting of the DVC (Research) with all early career appointees, for the first three years after appointment, to discuss, *inter alia*, research goals, progress and obstacles.
4.2.2.5 At least one annual prestigious award, viz. the Vice-Chancellor's Research Award, to recognise particularly outstanding young researchers.
4.2.2.6 Consideration should be given to introducing additional awards for promising young researchers, the number and level of such awards to be determined by the University Research Committee, subject to budgetary considerations.

4.3 Teaching and/or Administrative Relief
4.3.1 *Principles:*
It is recognized that researchers need time to undertake research, particularly in the case of young researchers who are still establishing their careers.

4.3.2 Policy:
4.3.2.1 Teaching loads of young staff members should be carefully managed by Heads of School.
4.3.2.2 In the first year of appointment, they should not normally be allocated a full teaching load, as this is such a critical period for a newly appointed academic to establish his/her research activities.
4.3.2.3 Heads of Schools should exercise care in assessing the teaching loads that staff members carry and be innovative in shaping the teaching commitments in a way that provides for periods of focus on research.
4.3.2.4 Teaching relief (e.g. buying out of teaching time) should be considered in appropriate cases, especially where external grants are available to fund the teaching relief.
4.3.2.5 Administrative loads on young researchers should be held to a minimum.
4.3.2.6 Consideration should be given to allowing the award of an early sabbatical to those with available sabbatical leave for instance, to expedite the completion or publication of the results of a large project.

4.4. Career Advancement
4.4.1 Principles:
The advancement of outstanding young researchers is a priority. Care should be exercised to prevent the notion of "serving time" from acting as an impediment to the career advancement of young research "stars".

4.4.2 Policy:
4.4.2.1The promotion system within the University should be able to accommodate young research "stars".
4.4.2.2 Accelerated promotion should be considered for outstanding young researchers.
4.4.2.3 P-rated researchers should be appointed at suitable levels and not be restricted to appointment at the lecturer level.

4.5 Development of Young Researchers in Designated Groups

4.5.1 Principles:
The need to diversify the pool of young researchers and to strengthen the equity programme of the University is a high priority.
4.5.1.2 Special programmes are in place and new ones will be developed to support and encourage young researchers from the designated groups.
4.5.1.3 The need to be proactive and identify highflying students in designated groups needs to be emphasized.

4.5.2 Policy:
4.5.2.1 The need to start mentoring for designated groups at the undergraduate and Honours level should be seen to be a responsibility of the School Research Committee.
4.5.2.2 The University should continue its strong support of the Thuthuka, LEAP and similar programmes, and its efforts in seeking additional donor funding to sponsor such activity.

4.6 Attracting Outstanding Young Researchers to the University
4.6.1 Principles:
The University needs to be proactive to attract outstanding young researchers.
4.6.1.1 "Head-hunting" of young "stars" in strategic research areas is to be encouraged.
4.6.1.2 Strategic research areas include not only *the* strategic research initiatives of the University (see Research Policy III: Collaborative Research and Strategic Research Initiatives), but also areas where there is a dynamic and established team of active and well-resourced researchers who can provide a supportive environment.

4.6.2 Policy:
4.6.2.1 The role of existing research leaders within the University is important in the process of attracting outstanding young researchers to the University.
4.6.2.2 Postdoctoral Fellowships are an important means to stimulate this process. More such positions should be created by the University, subject to budgetary considerations.
4.6.2.3 Consideration should be given to the creation of supernumerary posts to attract outstanding young researchers as an interim measure until a permanent post becomes vacant.
4.6.2.4 Salaries for highly promising young researchers offered by UKZN must be competitive with those of other universities.
4.6.2.5 Access to excellent library facilities, equipment, workshops, laboratories, high-speed computer networks, and technical and administrative support should be ensured.
4.6.2.6 A supportive, non-bureaucratic University administrative support structure is vital.

5. Policy Mechanisms for Attracting and Retaining Research Leaders

5.1 Identification of Research Leaders
5.1.1 Principles:
The University has a number of mechanisms to identify researchers who show potential to be research leaders, and to foster and support them, and these need to be enhanced. The University identifies 'research leaders' carefully as individuals who are high-quality scholars and are doing ground-breaking research.

5.1.2 Policy:
5.1.2.1 The DVC (Research, Knowledge Production and Partnerships) and Research Office, together with College and Faculty research structures, keep a watching brief on the research performance of all staff, and identify potential research leaders. They also ensure that suitable mentorship is available when this is needed.

5.1.2.2 Such future research leaders should be encouraged and supported in their quests to find external funding and to build up a research group.

5.2 Support from the University

5.2.1 Principles:

Recognition or acknowledgement of research achievements is an important incentive. A feeling of being valued motivates researchers to greater achievements.

5.2.1.1 Such recognition may include financial reward, time, celebration by the University of the researchers' achievements, and in particular, an enabling, non-bureaucratic environment.

5.2.1.2 The creation of formal opportunities for recognition by the University Leadership is to be encouraged.

5.2.1.3 The establishment of a strong link between research leaders and research management is important.

5.2.1.4 The University encourages leading researchers to form research teams.

5.2.1.5 The University provides support in facilitating applications for research funding.

5.2.2 Policy:

The Research Office should ensure the following forms of recognition of research leaders:

5.2.2.1 Acknowledgment of achievements by researchers in the form of a personal letter from the Vice-Chancellor, DVC (Research, Knowledge Production and Partnerships) or Research Office.

5.2.2.2 Publicizing of research achievements in a University newsletter and dissemination thereof to the media and the wider public.

5.2.2.3 Recognition by the University of High-flying NRF-rated Academics.

5.2.2.4 Regular meetings of the DVC (Research, Knowledge Production and Partnerships) with all leading researchers, to discuss, *inter alia*, research goals, progress and obstacles.

5.2.2.5 Prestigious awards, such as the University Fellowship (see below), to recognise particularly outstanding researchers.

5.2.2.6 Support for collaboration and the formation of Centres and Units (see Research Policy IV: Institutes, Centres and Units) by providing added research funding where such groupings provide added value, but expecting enhanced research productivity in exchange.

5.2.2.7 Proactively providing support and advice to researchers seeking external research funding.

5.3 Teaching and/or Administrative Relief

5.3.1 *Principles:*

It is recognized that researchers need time to undertake research, and in an environment in which paperwork and administration loom large, leaders of research groups are increasingly under pressure. The University, through the Deans and Heads of Schools, must adopt strategies to make time available for research .

5.3.2 Policy:

5.3.2.1 Teaching loads within Schools should make allowance for time spent by leading researchers on postgraduate teaching and mentoring, as well as on administration of research groups.

5.3.2.2 Teaching relief (e.g. buying out of administration or teaching time) should be considered in appropriate cases, especially where external funds are available to support this.

5.3.2.3 Consideration should be given to allowing periods of unpaid leave in special circumstances, for instance, to expedite the completion or publication of the results of a large project.

5.3.2.4 The University should give consideration to the creation of a limited number of academic posts with a reduced teaching and administrative load, appointments to them being for periods of 3 years, on a competitive basis, and renewable.
5.3.2.5 The University should give consideration to the creation of a limited number of "research assistantships", available to leading researchers on a competitive basis.

5.4 Attracting Research Leaders to the University

5.4.1 Principles:

The University needs to be proactive to attract appropriate research leaders from outside. This would entail "head-hunting" with the ability to provide suitably designed packages.

5.4.2 Policy:

The University should, where appropriate, make use of "head-hunting" of outstanding researchers to draw them to the University. This would imply proactive action by key members of selection committees, and would require an ability to offer suitably attractive "packages" (in regard to salary, research infrastructure, support and start-up funding, as well as research support, e.g. through Postdoctoral fellowships).
5.4.2.1 The role of existing research leaders within the University is important in the process of attracting other outstanding researchers to the University.
5.4.2.2 School and Faculty research structures play an important role in assisting new research leaders in settling down in the University.
5.4.2.3 Making Postdoctoral positions available to research teams is an important means to attract research leaders, and more such positions should be created by the University, subject to budgetary constraints.
5.4.2.4 Salaries offered by UKZN to research leaders must be competitive with those of other universities.
5.4.2.5 Access to excellent library facilities, equipment, workshops, laboratories, high speed computer networks and technical and administrative support should be ensured.
5.4.2.6 An enabling, non-bureaucratic University administration is essential.

6. The Society of UKZN Fellows (University Fellowship Award)

6.1 Principle:

6.1 The University gives recognition to those on its staff who have distinguished themselves through their outstanding research and scholarship, or creative performance.
6.1.1 At the same time it recognizes the contribution that such academics, individually or as a group, can make to the academic ethos and scholarship of the University, and calls upon them to play a wider role in the University.

6.2 Policy:

6.2.1 The University has established the University Fellowship Award to give recognition to its research leaders and to its outstanding creative performers.
6.2.2 Fellowship carries with it no remuneration, nor does it, of itself, give rise to special advantages in regard to research funding.
6.2.3 Typically approximately three new Fellows are selected annually. In line with international norms in learned societies and academies, selection to Fellowship is essentially in the hands of existing Fellows. Details of the criteria and selection procedures are set out in Appendix A.

6.2.4 The University Fellows formally play a wider role in University research policy in that they are represented on the University Research Committee and on the Selection Committee for the Vice-Chancellor's Research Award.
6.2.5 As leaders in the University scholarly community, Fellows are expected, as individuals, to play an active role in guiding young researchers and in research capacity building, to advise in the development of curricula, and generally to be active in enhancing the scholarship and academic ethos of the University.
6.2.6 In the above context, the University Fellowship should give consideration to organizing regular academic/public lectures, to act as an intellectual powerhouse within our research community, to encourage cooperation and communication among academics from different fields of interest, and to increase scholarly pride in our institution.
6.2.7 The Society of UKZN Fellows meets on a biennial basis with support from the University's Research Office. Representatives of the Fellows meet with members of the Executive once every semester to interact as an entity with the University.
6.2.8 The University has the right to withdraw the title of Fellows from individuals who damage the reputation of the University through the practice of poor or unethical . research methods.

7. University Research Funding: Rewarding Research Outputs

7.1 Principles:
7.1.1 It is in the interests of the University to provide funding support to researchers – such funding is, in fact, an investment for a research-oriented institution.
7.1.2 In line with a commitment to efficiency and effectiveness in research administration, the research awards should be made with a minimum of bureaucracy.
7.1.3 The aims of such an investment are to enable productive researchers to continue their activity, to widen the pool of productive researchers, and to enhance postgraduate research.
7.1.4 The bulk of the awards should be based on research productivity, as is the case for the national research funding policy.
7.1.5 The researcher should have maximum freedom in the use of the research reward funding, as long as it is used for *bona fide* research purposes.
7.1.6 In the interests of capacity building, there is a need for a separate mechanism to support new researchers on a competitive basis.
7.1.7 It is recognised that, in addition to rewarding productivity, some mechanism is required to reward the quality of research.
7.1.8 Honorary staff members who publish research in the name of the University should have access to the same research reward funding as is the case for paid staff members.
7.1.9 The University should continue to provide funds for the capital equipment needs of researchers.
7.1.10 In addition to funding individuals, as set out above, the University sets aside limited funds to enable researchers to collaborate, so that the University gains recognition for depth of expertise in certain niche areas.

7.2 Policy:
7.2.1 The University will continue to use a significant fraction of its budget to support the research endeavour. It will endeavour to reach 4% of the budget by 2009.

7.2.2 The Research Office will assist staff in obtaining external funding so as to grow the pool of available research funds.

7.2.3 Linking University research funding directly to research productivity provides an easily administered, efficient, non-bureaucratic method of distributing funds in a way that provides productive researchers with the means to be productive in the future.
7.2.3.1 Differential rewards are provided, for instance, for journal articles, conference presentations, books, patents and successfully graduating research students (see Appendix B).

7.2.4 Subject to some constraints that may be imposed by other University policies, the researcher shall be free to use the research award for *bona fide* research purposes at his/her discretion, for instance, for running costs, conference attendance, equipment, or staffing, on a time-scale that suits the researcher's work.
7..2.4.1 Contract staff who are actively involved in research will be rewarded similarly, but pro-rata, to full-time staff. Funds received for this category of staff should be allocated to a faculty or school account to be used for further research by contract staff.
7.2.5 As it is recognised that an individual's publication rate is likely to fluctuate from one year to another, it is important for researchers to plan for the associated variable research funding that follows.

7.2.6 Although individuals are rewarded for their productivity, collectives may wish to pool their resources for specific projects.

7.2.7 In implementing the policy, it is important that the Research Office makes payment of the awards as soon as possible after publication date, and that regular and transparent payments be made for all categories of award, including non-SAPSE journal articles, books and book chapters, creative contributions, students, etc. Furthermore, where possible, researchers should be provided with a list of accepted outputs and the number of productivity units awarded for each output.

7.2.8 In the interests of capacity building, and as it is imperative to widen the pool of productive researchers, a system of competitive research grants is operated to enable new researchers, as well as those who have been through a fallow period and are resuscitating their research activity, to obtain funds for a limited period. This system is set out in Appendix C.
7.2.8.1 Consideration should be given by the University Research Committee to the provision of additional seed money to support promising young researchers, including funding to attend conferences, and a possible higher research productivity reward, to assist and motivate young researchers until they become established.

7.2.9 Although, clearly, an ideal system would reward both quantity and quality of research, it is recognised that quality judgements are often subjective, and require a bureaucratic mechanism of evaluation. In addition, perceived indices of quality, for example, impact factors, vary considerably across disciplines, and sometimes even within disciplines.
7.2.9.1 The process of evaluation for productivity rewards shall, as far as possible, be transparent and, where appropriate, contributors furnished with reasons for rejections.
7.2.9.2 As one attempt to reward quality, the University provides an award for an improvement in NRF rating (see Appendix B).
7.2.9.3 In addition, a mechanism to reward authors of outstanding journal articles is introduced on a trial basis for two years. Details are set out in Appendix D.

7.2.10 Senior Research Associates, Honorary Research Fellows and other Honorary staff of the University who publish research in the name of the University are eligible for research reward funding in the same way as paid staff members.

7.2.11 Over the past several years national funding by the NRF for the acquisition, repair and maintenance, and replacement of capital equipment for research has been minimal. There is thus a great need for the University to continue to provide funding both for moderately expensive research equipment (< R50 000), and for expensive capital equipment (R50 000 or more).
7.2.11.1 Research equipment that is necessary for well-motivated proposals that fall within the research programme of a School, and costing up to R50 000, should be budgeted for in the Schools' annual budget.
7.2.11.2 Grants for expensive capital equipment needed for research and costing R50 000 or more, are available on a competitive basis. Factors taken into consideration in awarding grants include (a) that the research falls within the School's or Faculty's research programme, (b) the research productivity of the applicant, (c) the number of likely users, including postgraduate students, and (d) the extent to which the equipment could be funded from external sources.
7.2.11.3 Very expensive equipment should be funded as a regional facility, and with the support of external funders.
7.2.11.4 For the urgent repair and maintenance of expensive research equipment, applications can be submitted for consideration for funding by the University through funds administered by the Research Office.
7.2.11.5 For funding purposes, expensive specialised texts, legal publications, electronic resources or museum pieces that may be of great importance to researchers in the Humanities, are treated as essential "research equipment".

7.2.12 In order to encourage researchers to form teams and collaborate, limited funds are available for collectives, to enable them to add value to their research activity through collaboration (see Research Policy III: Collaborative Research and Strategic Research Initiatives).

7.2.13 The University will develop a Expensive Capital Equipment Plan to maintain the competitiveness of its laboratories and research facilities.

8. Retaining the Capacity of Retired Academics

8.1 Principles:
The University notes that a significant number of active researchers have recently retired, or will be retiring shortly. It recognises that such retirees can continue to make a valuable contribution to the promotion and enhancement of the research culture of the University in general, and specifically to research capacity building. It therefore has instituted mechanisms to enable such retirees to continue to do research and to act as mentors, and wishes to use the experience and ability of the retired academics for the benefit of the overall research endeavour.

8.2 Policy:
8.2.1 The University has established the position of Senior Research Associate, for which retired academics may apply.
8.2.1.1 In principle a 3-year appointment, the position provides for much of the infrastructure needed by a researcher to continue with her/his activity beyond retirement.
8.2.1.2 Senior Research Associates are eligible for University research funding as set out above (see 7.2.8).

8.2.1.3 To this end, SRAs shall be given a staff number, have access to IRMA, and, like paid staff members, have discretion over their research funds, subject to established approval mechanisms.
8.2.1.4 SRAs are also eligible for research funding through the National Research Foundation, subject to any constraints that the NRF may impose.
8.2.1.5 There is no remuneration associated with the position as such, but appointees may be paid for specific activities on behalf of the University (see below).
8.2.1.6 Details of the method and term of appointment, and the privileges associated with the appointment are covered in other policies already approved by Senate and Council in 2004.[1]
8.2.2 Senior Research Associates may participate in the undergraduate and postgraduate teaching programmes of the University, and be paid for such activity as temporary lecturers, independently of their role and privileges as SRAs.
8.2.3 Amongst retired academics there are some with special skills in research capacity building and mentoring, both of postgraduate students and of junior (academic and technical) staff. It would be to the advantage of the University to tap into this reservoir of research leadership, experience and expertise, drive and enthusiasm, and retain these skills resident in its retired academic staff.
8.2.3.1 To this end, consideration should be given to making available within each College a limited number of part-time mentoring posts, appropriate to the research development needs of the College. These would be made available by Heads of Schools, on a competitive basis, to be applied for by Senior Research Associates to assist in research leadership, co-supervision of postgraduate students, mentoring of both academic and technical staff (including junior and new staff), and capacity building. Remuneration could be in line with the mentoring emoluments paid in the framework of the NRF-University Thuthuka programme.
8.2.3.2 Where supervision of postgraduate students is concerned, SRAs may supervise research students on the basis that the supervision be shared with young academic staff, so as to transfer skills and build supervision capacity.
8.2.3.3 SRAs play research leadership and mentoring roles.
8.2.3.4 At the discretion of the College DVC, retired academics from other institutions who, on retirement, are resident in KwaZulu-Natal, could also be eligible for appointment to these part-time mentoring positions.
8.2.4 Professors Emeriti and Fellows of UKZN are automatically given the same privileges as those enjoyed by SRAs.

[1] "University of KwaZulu-Natal Appointment Categories," approved by Senate in November, 2004, and Council in December, 2004.

Appendix A

GUIDELINES AND PROCEDURES FOR SELECTION: UNIVERSITY FELLOWSHIP AWARD

1. Nominees:

- must be members of the permanent academic staff who have held an appointment at the University for a continuous period of 3 (three) years prior to the closing date for nominations.
- must have distinguished themselves in academic work or in performance which is of such high quality as to merit special recognition by the University.

2. A nomination must be supported by three members of the University Senate and must be accompanied by:

- a brief statement as to the nominees' distinguished contribution(s) in his or her field, and reasons why the candidate should receive the award;
- a curriculum vitae, details of publications, reviews of publications (or cited references) and other evidence of distinction;
- the names of eight referees (local and overseas), at least one of whom should normally be from outside South Africa where the field of activity makes this a reasonable requirement. Referees should be persons of high standing who have distinguished themselves in a relevant field. The University reserves the right to call for assessor reports.

3. The selection committee shall be constituted in terms of Senate rules applicable to all Senate sub-committees. The committee will consider the nominations for the award of Fellowships and make recommendations to Senate.

4. The selection committee, in its consideration of nominations, shall:

- consider the originality and creativity of the nominee as manifested in research work or in other applications of the discipline;
- regard publications (or their equivalent) as the main evidence of original distinguished academic work (such publications should make a significant contribution to the field);
- recognize public presentation of work in the performing arts and in the fine arts as being equivalent to research and publication;
- require evidence of international recognition of a nominee's work where the field or activity makes this a reasonable requirement;
- reserve the right to call for assessor reports in addition to referee reports;
- invite referees to comment, inter alia, on whether the nominee is exceptional and worthy of being considered and, in respect of publications, the level of production, the media used for publications, the quality and depth, the standing within the discipline concerned and the international and/or national standing. Referee reports shall be treated in the strictest confidence.

5. The selection committee makes its recommendations to Senate for approval. Senate will forward its decision to Council for ratification.

6. Fellowships are conferred for life and are not allotted or restricted as between grades of staff or as between subjects, disciplines or faculties. Fellowships shall be entirely independent of promotion or other changes in a staff member's conditions of service.

7. Award of a Fellowship of itself does not give rise to any remuneration or advantages in regard to research funding.

8. A Fellow who leaves the service of the University shall have the right to be called "Sometime Fellow of the University of KwaZulu-Natal", provided that should he or she subsequently return to a permanent academic post at the University he or she shall automatically become a full Fellow of the University of KwaZulu-Natal.

9. The award of Fellowships shall be formally announced at the appropriate graduation ceremony where the Fellow shall be presented with a certificate. The graduation ceremony programme shall contain a citation of 200 words setting out the grounds for the award of the Fellowship. Such citation shall be prepared by the Deputy Vice-Chancellor (Research).

10. A list of Fellows of the University shall be maintained by the Research Office and shall be published in the University Calendar.

Appendix B

PRODUCTIVITY AWARDS

Submission procedure

1. IRMA
All staff members are invited annually to record their research output on the IRMA web-based database. Details regarding all SAPSE accredited journal articles are entered onto the database, and first and last pages (and any additional pages if the journal details etc do not appear on either of these two pages) of the articles are sent to the Research Office for auditing.

2. Submission to Faculty Research Committee
The Faculty Research Committees conduct an annual evaluation of all other research output, including books, patents, refereed conference proceedings, journal editorials, journal articles (non-SAPSE), chapters in books, edited books, and creative contributions. Copies of output together with supporting documentation are submitted to the Research Office after a call for submissions.

Note that the award due for graduating students is calculated by the Research Office, on the basis of information recorded in the official faculty graduation books.

Productivity Allocations

Category		**Productivity Units**
Refereed conference proceedings		4
Journal editorial		8
Journal Article		15*
Chapter in book		15
Edited book		30
Creative contribution (local)		15
Creative contribution (international)		50
Graduating course work + Research Masters students (with ≥50% dissertation component NRF approved)		6
Graduating full dissertation masters students		12
Graduating Doctoral student		60
Patent		80
Book		100
Improvement in NRF rating	Within major category (A, B, C)**	60
	Between categories	100

*** Article in SAPSE or recognised Professional journal: 4 × 15 = 60**
** Also including: (1) A-rated scientists retaining their A-rating, and (2) researchers who receive a rating for the first time.

Use of funds

Funds may be used for any research related expenditure, including (a) Personnel (e.g., research and teaching assistance); (b) Running Expenses (e.g., travel, subsistence, field work, operating costs); (c) Equipment (including journal subscriptions and internet subscriptions for home-based research), books, etc); (d) Conference attendance; and (e) Membership of scholarly and professional societies, excluding fees payable to statutory licensing bodies. (f) Study fees payable to another university where the UKZN staff member is the only specialist in a particular field and has to register at another instition for doctoral studies. The funds are spent entirely at the discretion of the awardee (within the strictures of University Finance and Buying policy). There is no time limit for using the funds.

The deployment of these funds must comply strictly with UKZN's financial policies and procedures.

Appendix C

COMPETITIVE GRANTS

Who May Apply for Funding?

Competitive Research Grants are available to the following staff:

- New Staff members will be eligible to apply twice within the first 3 years after joining the University.
- Staff members who due to special teaching, community or administrative responsibilities are initiating research as part of their academic activities. (These need to be strongly motivated).
- Staff members undertaking research for their doctoral degrees

Staff from previously disadvantaged groups are strongly encouraged to apply.

Funding

(1) Proposals

Grants will be made available for a period of one or two years. Grant requests may vary, up to a maximum of R150 000.

Support may be requested for: (a) Personnel (e.g., research assistance); (b) Running Expenses (e.g., travel, subsistence, field work, operating costs); (c) Equipment (not exceeding R50 000); (d) Conference attendance.

(2) Without proposals

Instead of preparing a proposal, new staff may elect to apply for a once off research grant which will be the equivalent in value to one SAPSE unit. An application for this award precludes any further applications for a competitive grant.

Evaluation

Each application will be forwarded to at least one reviewer, who may be external to the University, for an evaluation of the research proposal in terms of novelty of the research idea, academic merit, feasibility, and budgetary requests. The reviewer's report will serve before the Competitive Grants Committee, which will make the final decision on funding.

Ethical Approval

Studies involving animals or human subjects must receive ethical approval before funds will be released. To facilitate this, the Principal Investigators of such projects will be informed that they have been successful pending ethical approval.

Appendix D

AWARDS FOR OUTSTANDING JOURNAL ARTICLES

In order to promote and reward high quality publications, the Research Office will make up to 5 awards annually for outstanding journal articles published in the previous year. The awards will take the form of prizes to the value of R50 000 each.

The awards are for truly outstanding publications. A call for applications will be sent out to all academic staff annually. Applicants should submit a copy of the paper together with a motivation by the author, explaining why the paper is outstanding. Other supporting documentation – such as reports from the journal editor or blind reviewers – will strengthen the application. The award will mainly focus on those papers published in journals ranked in the top quartile (in terms of impact factors) of the discipline. Applications should state the discipline promoted by the article so that the Research Office can establish the rank of the journal within the discipline from the ISI database. The Research Office will constantly survey the efficacy of using the ISI databases and assess the use of others.

A subcommittee of the University Research Committee will evaluate all applications and recommend awards for articles that they deem truly outstanding.

University of KwaZulu-Natal
School of Information Systems and Technology
Pietermaritzburg Campus

End User Computing (ISTN100)

STUDENT GUIDE

TITLE AND CODE OF THE MODULE
End User Computing ISTN100

CREDIT VALUE OF THE MODULE
16 credit points

PREREQUISITES FOR THIS MODULE
There are NO prerequisites for ISTN100

Note that credit cannot be obtained for ISTN100 and ISTN101, COMP100, COMP101, COMP104 or COMP105 except where ISTN100 and ISTN101 are taken as part of the BCom4 (extended curriculum) programme.

PURPOSE OF THE MODULE
This module aims to emphasise the use of computers as integrated productivity tools.
It will

- introduce end-user computing definitions and concepts to novice users
- introduce students to computer hardware, software and databases
- provide a practically-oriented environment in which to develop effective skills using standard application software as an integrated tool

STATEMENT OF SPECIFIC LEARNING OUTCOMES
On completion of this module, students will have a basic knowledge and awareness of

- introductory end-user computing terminology
- computer hardware and software
- computer networks and data communications
- computer security and backup
- health and safety issues associated with using a computer

So that they can

- define and use Information Technology (IT) terminology
- describe how hardware and software is used
- demonstrate their skills as knowledge workers through effective and efficient use of packaged software
- send and receive information using the Internet and its related components
- explain data communications and the role of networks
- describe appropriate security and backup measures
- describe some of the hazards associated with using a computer

OPEN LEARNING SYSTEM

Information such as notices and practical exercises, etc will continuously be placed on the OLS by the lecturers of the module. You are encouraged to utilise this resource, and may be directed to it from time to time by your lecturers. The Open Learning System can be accessed at http://ols.ukzn.ac.za. You will need to use your ICTD Novell (GroupWise) login and password to access the site.

MODULE MATERIALS

Notes are available on the OLS for some of the topics covered in ISTN100.

There is no prescribed text but Munnelly, B. Holden, P. *ICDL The Complete Coursebook for Microsoft Office 2003* (Prentice Hall 2005) may be used however the software Microsoft Office 2007 is used in ISTN100 and not Office 2003.

Copies of the book are available on Short Loan in the Library.

STAFF

Staff are available for consultation during the hours displayed on their office doors. If, in exceptional circumstances, you wish to meet at a different time, please make an appointment through the School secretary (Ms B Hoosen F13 Science Tel 260 5704). You are encouraged to use electronic mail (e-mail) to facilitate communication with your lecturers.

The following staff members will be involved with the module:

Role	Name and E-Mail	Tel. No.	Office	Function
ISTN100 Module Coordinator & PMB Campus Coordinator	Mrs M Hughes hughesm@ukzn.ac.za	260 5643	F42 Science	Deals with course coordination & PMB module administration e.g. timetable clashes, missed tests, student consultations & presents lectures
Tutors	Ms S Ramgobin ramgobin@ukzn.ac.za	260 6210	F43 Science	
	Mr N J Jere jeren@ukzn.ac.za	260 5978	G11 Science	Deals with student consultations & presents lectures, tutorials and practicals
	Ms N Mndzebele mndzebele@ukzn.ac.za	260 6291	G26 Science	
	Mr P Ndayizigamiye	260 6291	G26 Science	

NOTICES

You are advised to check the ISTN100 notice board (located opposite room F42 in the Science Block) and the ISTN100 OLS homepage (www.ols.ukzn.ac.za) every day for announcements, marks and information on practical/tutorial times and venues, test times and venues, schedule changes etc. Except in the case of weekends and holidays, a period of 24 hours will be regarded as sufficient time for students to have acquainted themselves with any notice published.

TYPES OF DELIVERY

- Lectures

There are three lectures per week; Tuesday Period 8; Wednesday Period 9; Friday Period 4 in the DSLT

- Tutorials

There will be one tutorial per week on Friday period 5 in DSLT

- Practical Sessions

Practical sessions are held in the computer laboratories (G20 Science) to enable students to become familiar with using computers. You will be allocated to a practical session (a double period) for the entire semester. Practical schedules will be posted on the IST notice board.

It is the student's responsibility to complete the tasks set in the practical sessions, and to reach a satisfactory level of knowledge and interaction with each of the applications used. This knowledge will be examined in the tests.

It is your responsibility to report any timetable clashes with regards to ISTN100 practical sessions to the Campus Coordinator (Mrs Hughes) during the first week of the semester.

Tutorials and Practicals will start the week beginning 15 February 2009.

IMPORTANT DATES

It is advisable to diarise the following important dates:

Event	Date and Time
Test 1	Tuesday 23 March (exact time & venue to be announced soon but will be starting sometime between 16:00 and 17:30 and last 1 hour)
Test 2	Monday 3 May (exact time & venue to be announced soon but will be starting sometime between 16:00 and 17:30 and last 1 hour)
Aegrotat Test	Friday 7 May 10:30 – 11:30 Coverage: All material of both Test 1 and Test 2
Examination	May/June, date to be published in University's examination timetable

Please note:

- A mark of 0% (zero percent) will be recorded for each test missed
- Students will only be allowed to write an aegrotat test if they produce **within 48 hours of the missed test** an appropriate medical certificate or a death certificate of a close relative for the day in question.
- The aegrotat test counts as replacement for only ONE missed test. Students missing both tests will be required to present themselves to the course co-ordinator and may be required to sit an oral exam before a panel of lecturers in addition to writing the aegrotat test. Failure to adhere to this will result in one test mark being recorded as 0% (zero).
- Students are pre-allocated to specific venues and specific seat numbers for tests. Please consult the notice board and OLS (prior to the test) to determine the venue in which you are expected to write and your allocated seat number.
- All tests & examinations will comprise only of multiple choice questions with no negative marking

ASSESSMENT

Your final mark will be made up of 50% continuous assessment and 50% written examination.

The continuous assessment component is made up of two tests (45% each) and a tutorial mark (10%). The tutorial mark will be based on marked tutorial questions.

Marks will be posted on the ISTN100 notice board and on the ISTN100 OLS homepage. It is your responsibility to check that your marks have been recorded correctly. Incorrect or missing marks are to be reported to the Campus Coordinator (Mrs Hughes) **within one week of the marks being released**.

DULY PERFORMED (DP) REQUIREMENTS

Attendance at all tests is compulsory. Students are strongly encouraged to attend all practicals as the majority of the assessment is based on practical skills & knowledge.

A valid medical certificate, death certificate of an immediate family member or prior condoned absence by the Campus Coordinator will normally be the only justification for being excused from a test.

Students producing acceptable documentation are **not** excused from a test, but will be allowed to write an aegrotat test. The module coordinator may decide to set oral tests if necessary.

Students must obtain a **continuous assessment mark of at least 40%** in order to write the examination.

A DP warning list will be posted towards the end of the semester and a list of DP refusals will be posted by 12 May.

CHEATING / COPYING

Students are advised that aiding, attempting to aid, or attempting to solicit aid from another student for any test may be considered as serious an offence as cheating in an examination. The penalty for such an offence could include exclusion from the University.