Library spaces in higher education: exploring academics' understanding
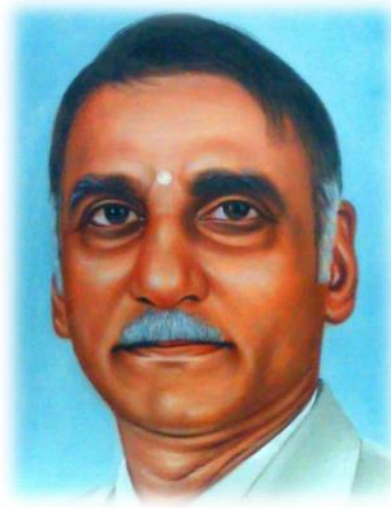
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Dedication

To my dear dad, Mr Jay Ramoudh, whom I miss so much and who constantly guides me – this one is for you. You have left a wonderful legacy which we can only try to emulate at best.

Declaration

I, Roshini Pather declare that

(i) The research reported in this thesis, except where otherwise indicated, is my original work.

(ii) This thesis has not been submitted for any degree or examination at any other university.

(iii) This thesis does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons.

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> a) Their words have been re-written but the general information attributed to them has been referenced;

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Acknowledgements

Abstract

During the last decade, technology, globalisation, and competition have caused the ground to shift in higher education worldwide. As an integral part of the campus, the academic library will be profoundly affected by changes in the university itself and in higher education generally. The role of libraries in higher education is dependent on the educational objectives of the university, namely Teaching, Learning and Research and in all three objectives the library plays a central role, especially in Research productivity. The role of the library as a place in the academics' working lives is becoming very different, however, from what it has traditionally been. The traditional academic library had been predominantly a place for collecting and preserving text-based scholarly literature, but with the changes in information technology, there are now different ways of organising, finding, and publishing (in the broad sense of making public) scholarly literature, both old and new. These collections have experienced intense expansion of scope and depth through access to a wealth of databases and electronic resources. As a result the traditional library is coming under great pressure. This study aims to understand how academics use the library space.   In particular, what effect the digital technology and change in pedagogy has had on their lived experiences as academics.

The theoretical foundation for the study was Henri Lefebvre's theory on the ontology of space which described three important concepts of space or the triads as being: "Spatial Practice (perceived space), Representations of Space (conceived space), and Spaces of Representation (lived space)". This conceptual trial was used as an analytical tool to explore the relationship between academics and library spaces. Library spaces are social spaces that are produced and experienced, and they are also being produced through the experience of their users.

This study was carried out at the University of KwaZulu-Natal, School of Education and relied on academics' voices to reflect on emergent research and library behaviour. The research design was a case study with an online survey of all academics in the School of Education at the Edgewood campus, UKZN, conducted to generate a mixture of qualitative and quantitative data on the understanding of research behaviour in library spaces The second phase involved semi-

structured interviews with a purposive sample of seven selected academics. This study employed a mixed methods design whereby qualitative and quantitative data were collected and document analysis undertaken.

The study offers a spatial model of the understanding of library spaces by academics which responds to the final critical question on how academic users theorise their understanding of the library space, which suggests that there are four aspects to be considered: a convergence of the academic library user identity with that of the general library identity, a fusion of the physical and virtual space, a merging of the perceived and conceived spaces, and academics' vision for the future of the library spaces. In their understanding, these academics do not see themselves as distinctive library users or having a library identity. They have shifted the spaces around in such a way that they are now using their offices and homes as research centres and their library visits are minimal as indicated by the data. A lot has been written about this shift of physical and virtual space and, it was found in this study that although academics do not have a library identity, they are busy shifting in their understanding of the library spaces. The significance of the study is that academics and their relationship with the library can now be located in a shifting space.

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List of Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ARC	Agricultural Research Council
ARL	Association of Research Libraries
ARWU	Academic Ranking of World Universities
ASSAF	Academy of Science of South Africa
CHE	Council on Higher Education
CHET	Centre for Higher Education Transformation
CSIR	Council for Scientific and Industrial Research
CURL	College, University and Research Libraries
CWIS	Campus Wide Information System
DHET	Department of Higher Education and Training
DHE	Department of Higher Education
DOE	Department of Education
FSU	Florida State University
FTE	Full time equivalent
GIS	Geographic Information Systems
HE	Higher Education
HEFCE	Higher Education Funding Council of England
HEI	Higher Education Institutions
HEMIS	Higher Education and Management Information System
HERANA	Higher Education Research and Advocacy Network in Africa
HIV	Human Immunodeficiency Virus
HSRC	Human Sciences Research Council
IBSS	International Bibliography of Social Sciences
ICT	Information and Communication Technology
ILL	Interlibrary loans

IM	Instant Messaging
IP	Internet Protocol
ISI	Institute of Scientific Information
ISSN	International Standard Serial Number
IT	Information Technology
JISC	Joint Information Systems Committee
LAN	Local Area Network
NDP	National Development Plan
NFF	New funding framework
NPHE	National Plan for Higher Education
NRF	National Research Foundation
OA	Open Access
OPAC	Online Public Access Catalogue
PDF	Portable document format
PhD	Doctor of Philosophy
PU	Productivity unit
QS	Quacquarelli Symonds
RAE	Research Assessment Exercise
RIN	Research Information Network
RSLG	Research Support Libraries Group
SAPSE	South African Post- Secondary Education
SPSS	Statistical Package for the Social Sciences
THE	Times Higher Education
UK	United Kingdom
UKZN	University of KwaZulu-Natal
UNLV	University of Nevada, Las Vegas
URL	Uniform resource locator
US	United States of America
VLE	Virtual Learning Environment

VPN   Virtual Private Network

WWW   World Wide Web

Contents

Chapter One: Introduction

1.1 Introduction

University libraries have by tradition played an important role in supporting research, teaching and learning in institutions of higher education. However, higher education has experienced a transformative change in the way students learn, in academic teaching styles and in the effect of globalisation and internationalisation on the ethos of the university (Barber and Rizvi, 2013; Carrim, 2013; Teferra, 2002; Waghid, 2002).

The other important change for university libraries, research and higher education was the advances and developments in information and communication technology (ICT). The effect on research and on libraries was huge and the widespread changes triggered by these new technologies continue to disrupt the traditional performance procedures of libraries and in the process making them less effective in establishing their input in higher education (Bennet, 2007; Kripp and Gottipattu, 2015; Latimer, 2011; Nutefall and Ryder 2010).

This chapter will outline the rationale for the study, the context in which academics and libraries operate, focussing on UKZN libraries, the research production at HEIs, and finally the resulting effect that they have on concept of library spaces.

1.2 Rationale for the study

An essential characteristic of a university is its commitment to scholarly activities primary to the production of knowledge and ideas and consumption of that knowledge and information. The justification or rationale for the study is based on evidence from my workplace and personal experience and is guided by three imperatives: The first imperative emerges from the context of research production. The advancement of knowledge through research has long been a major objective of higher education institutions (*Council for Higher Education*, 2006, p. 13). It is the research conducted in these HEIs that contributes to the

formation of innovative technologies, new businesses, and new professions. These will be needed to steer the nation's economic and social development and long-term economic competitiveness, both nationally and globally. It is a crucial academic endeavour and thus it is important that all academics, whether young or old, experienced or less experienced be encouraged to participate and engage in research activities. The higher education landscape is transforming with pressure on HEIs to perform as 'corporate entities' to function in the global economy and to create knowledge that will contribute to society and the economy. This is one of the reasons why this study can be considered significant (Reddy, 2004, p. 5).

Secondly, the rationale for this study is also personal as I have been a Campus Librarian for several years and I have gained knowledge and experience of being involved with university libraries which have been significant players in the academic research enterprise. As such, the study has a direct bearing on my immediate environment. My choice of this area of study resonates with Murrays (2005, p. 18) observation that if "you have expertise, experience, and a profile in an area, then it makes sense to find your research in that area, unless you hate it with a passion". As Denscombe (2002, p. 34) observes: "as far as social research is concerned, decisions about what to investigate frequently reflect the personal interests of the researcher". This is especially so for minor research, where the good and bad, previous and current personal experiences, is a major reason for the choice of topic.

I would like to explore the understandings regarding how the library space is used. As a Campus Librarian, there was a need to have a fresher understanding of academic research as research at universities requires a multifaceted infrastructure of individuals, services and equipment. It is therefore imperative for the library to understand and identify the research and teaching needs of academics and to provide an appropriate space for them to engage in preparation for teaching and research for their particular interests. Research that is of excellence and quality requires the necessary supporting infrastructure in the form of libraries and the research success of the University is dependent on the resources made available to its researchers and researchers-in-training. Having access to indicators of the

knowledge frontiers, such as journals, books, and databases, is a major requirement for undertaking viable, sustainable, and meaningful research. As the income derived from research and the institution's rating – nationally and internationally are crucial to the reputation and financial security of the university, the library therefore needs to make sure that they engage with academics and researchers and provide them with the resources, services and training they require. It is believed that this study will contribute to an enhanced understanding of the learning and support function of the library in the provision of services, and to find out if these services and resources are being used effectively.

The third imperative which is linked to the context is the personal, social and professional spaces that academics occupy. Researchers now have access to multiple publications on various platforms without using the library as an entry point and may not recognise or acknowledge how much of that content has been facilitated and provided by the library. As a result of having this access, librarians have the difficulty of marketing and endorsing library resources and services to academics because, as researchers they seldom have the need to physically visit the library. Developing liaison relationships with researchers is challenging because researchers are now choosing to work independently, to access information remotely and are satisfied with their information-seeking abilities without any involvement or interactions with the librarians. The challenge for the library is to understand the personal, social and professional arrangements and needs of researchers, to establish and embed library content and services within researchers' work routines, and to find ways to prove the significance of library services. The concept of the embedded librarian as suggested by Dewey (2004, p. 5) came about during the Iraq war when journalists were embedded in the various military sectors. Dewey (2004, p. 6) states that this concept is a "comprehensive integration of one group with another to the extent that the group seeking to integrate is experiencing and observing, as nearly as possible, the daily life of the primary group". This interaction targets and focusses specific groups and requires librarians to use their expertise and knowledge and to have a thorough knowledge of the research landscape at the university.

This exercise is compounded by the challenge of the escalating costs of library resources and their dwindling budgets. In light of these challenges and with the changing routine of researchers, librarians have to gather information from multiple sources to make decisions on what to purchase and assess how useful electronic resources are and what their place is in the overall library collection and exactly where to offer their support and services.

The place of the library has shifted given the imperatives facing libraries, namely the transformative effect that ICT is having, changes with regard to the processing, storage, dissemination and distribution of information, changing ways in which academics and other users use the library to find information. The context within which academics operate in is important to understand as well as the context within which the university and library exist. This will be discussed in detail in the next section.

1.3 Profiling the study context

Rule (2011, p. 40) states that: "the sense of context as a 'scheme' or 'structure' indicates that it frames or encloses a situation or an event in a particular way; it is the frame in which the 'picture' of the case is situated". As Atkinson (2000, p. 1) argues: "a case is a unit of human activity embedded in the real world which can only be studied or understood in context". To comprehend the case, it is imperative to understand the many contextual forces and influences that profile the case and how they influence the case. This refers to what comes before the instance to be studied.

In presenting the background to the study the following is covered: the University of KwaZulu-Natal (UKZN), the School of Education, and the University of KwaZulu-Natal Libraries. The University of KwaZulu-Natal is an academic institution with a mission that is threefold: teaching, research and community engagement. Several of the graduate programmes are ranked as the finest in the nation and a substantial number of graduate and professional programmes are ranked in the top ten nationally. The university has a history of drawing excellent faculty who achieve national and international recognition in

their disciplines. In addition, the university has a strong reputation for research productivity and funding, technology transfer and dedication to diversity within the university and surrounding community.

As a result of the higher education restructuring taking place in the country, the University of Durban-Westville and the University of Natal merged and came into being on the 1st January 2004. It is known as the University of KwaZulu-Natal. The merged Institution operates on a multi-campus environment made up of five campuses, namely: Edgewood, Howard College, Pietermaritzburg, Westville and Medical School (Umbilo) campus. The University consists of four Colleges which are further divided into Schools. The mission of the new UKZN is to be a South African university, dedicated to academic excellence, innovation in research, serious engagement with the community and demographically representative, remedying the disadvantages, inequalities and disparities of the past. UKZN has a vision and mission of being known as the 'premier university of African scholarship.' The university aims to produce research that enhances knowledge, skill and values necessary for development of the African continent such as African renaissance studies, poverty and development studies, study of the Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS), social studies and food security studies (University of KwaZulu-Natal, 2016, http://www.ukzn.ac.za/about-ukzn).

The School of Education is located at two sites namely, Edgewood (Pinetown) and Pietermaritzburg and there are also a smattering of courses in the discipline of Higher Education offered at the Howard College campus in Durban. The School offers multi-disciplinary and inter-disciplinary programmes with a wide range of undergraduate as well as postgraduate degrees presenting diplomas, Honours, Masters and Doctoral study programmes. It offers undergraduate and postgraduate courses in disciplines such as arts, environmental sciences, computer science, languages, social sciences, physical sciences, mathematics, science and technology and various disciplines in education such as leadership and management, philosophy and curriculum studies. At the time of the survey it had 124 permanent academic staff, of which 85 are based at the Edgewood campus. The permanent

staff also includes contract staff with a contract period of more than two years. The School has the following "six disciplines or thematic groups: Education Studies, Education Development Leadership and Management, Languages and Art Education, Mathematics and Computer Science Education, Science and Technology Education and Social Science Education. Each of these disciplines is headed by a Cluster Leader" (http://soe.ukzn.ac.za/).

In 2004 according to plans that the Government had for higher educational restructuring institutions of higher education (HE) in South Africa were reduced by combining institutions and this resulted in the reduction of thirty-six institutions to twenty-one (http://www.ukzn.ac.za/about-ukzn/history).

As a consequence of the restructuring the University of Durban-Westville (Durban) and the University of Natal (Durban and Pietermaritzburg campuses) merged, resulting in a single division of UKZN Libraries which provides library services on all campuses. There are five campus libraries, namely Edgewood, Howard College, Medical School, Pietermaritzburg and Westville campus libraries. The Howard College, Pietermaritzburg and Westville campuses also have branch libraries that serve particular academic disciplines. The libraries are responsible for the management of academic information and knowledge and for providing access to global information that supports the teaching, research and learning at the university *(University of KwaZulu-Natal, Library, 2014).*

The Edgewood campus library caters only to the School of Education. Prior to the merger with the University of Natal in 2001, the campus was home to the Edgewood College of Education administered by the Department of Education. This College catered to a small cohort of just over 500 students and 60 academic staff. The campus was designed to cater for 1,200 students with the lecture theatres that could seat no more than 250 and a library that could only seat 120 users. As there was a smaller university community, library staff were very familiar with the academics (Wasserman & Bryan, 2010, p. 125).

With the merger with the University of Natal, the library had to develop and transition from a college library to a university library. The programme on offer had been a predominantly undergraduate curriculum. As the university offered both undergraduate and postgraduate programmes, a postgraduate component at Edgewood had now to be catered for. The physical design of the campus in 2001 was very different from what it is now. This study was undertaken against this background – where not only the physical space but also the virtual space has changed.

The library offered services to 45,653 registered (contact) students across all 5 campuses in 2014. The Edminson Library, Edgewood offered services to 6073 registered students in the School of Education as well as researchers and lecturers across the entire institution (*UKZN, Institutional Intelligence Reports, 2014*). The library housed 1,252,044 volumes (in print resources) in 2014 and subscribed to over 3,000 journal titles. UKZN staff and students also had access to over 136 databases and electronic journal collections. In addition, the library launched the University's institutional repository, *ResearchSpace*, in September 2009, which to date has 11,324 digital theses of which 1,501 is from the School of Education. *(UKZN, Library, 2014*, p. 3).

A large proportion of the library's materials budget is spent on journals and databases that support research endeavours. Expenditure on information content, both electronic and in print represents about 70 per cent of all library expenditure across the university library sector, and that proportion has been relatively stable over the past decade (*University of KwaZulu-Natal, Library, 2014*). Developing electronic collections is a vital issue for academic libraries. The usefulness to the university community is an important factor in deciding the choice of print and electronic journals, databases and packages to purchase, but libraries have no way of measuring whether these are useful or not. Usage statistics can indicate how these collections are used, but not about the purpose of the usage and whether the information retrieved is useful or not. These statistics do not reflect if the downloaded material is used or cited thereafter. These statistics are not able to provide information on

which publications provide critical understandings and indicators for their work. Or if these downloads are ever used or simply saved and filed, never to be used again.

The size of the collection at the end of 2014 was 981,106 books and 270,938 volumes of bound print journals, of which 72,304 books and 5,741 volumes of bound print journals were in the Edminson Library, Edgewood. In 2014, electronic resources (journals and databases) accounted for 44 per cent of the total library budget, but made up 87.7 per cent of the total library materials budget. Nearly 70 per cent of journal subscriptions were available electronically. This is an increase of 20 per cent in the electronic journal subscriptions to that of those subscribed in 2010. The library has purchased many international electronic databases with a package of titles such as the EbscoHost Research Databases with titles such ERIC, Academic Search Premier, PsychInfo; Elsevier's ScienceDirect; OCLC's ArticleFirst, FirstSearch, Conference Proceedings and the Web of Knowledge's citation indexes: Art and Humanities Index, Science Citation Index (SCI), Social Science Citation Index (SSCI); ProQuest's Dissertations & Theses, Conference Papers Index and Medline; WilsonWeb and SpringerLink. The library has also purchased many local databases with Sabinet such as Current & Completed Research, Government Gazettes and Index to South African Periodicals (*UKZN, Library, 2014,* p. 3).

1.4 Academics, Research and the Library

Universities in South Africa, UKZN included, and those around the world, typically divide their academic activities into three main categories: – research, teaching and community outreach. Academics are required to do research for professional development (either 'publish or perish'); establish themselves as researchers, contribute to the scholarly literature, collaborate with their colleagues, boost UKZN's institutional output (Cresswell, 2009; Leathwood, 2013; North, 2011; Zoellner, 2015) and eventually to contribute to national development.

Engagement in research occurs either in the formal supervision of postgraduate students in masters' and doctoral programmes, or in the professional post-doctoral research carried out by academics themselves or for the academic staff's publication output. This entails intellectual enquiry at a high-level. When new knowledge is produced and generated, it has to be evaluated and undergoes peer-review and is subject to national and international norms and standards. An institution's research production and capacity is measured by the peer-review process and the research outputs of its academic researchers (Bentley, Habib and Morrow, 2006; North, 2011; Tourish, 2011).

Research is defined in the *Academic Promotions Policy* (UKZN, Division of Human Resources & Equity, 2008, p. 2) document as:

> "the pursuit of original knowledge and creativity". Evidence of achievement in Research would normally include possession of a doctoral degree, publications of original contributions to knowledge in peer-reviewed journals and/or books and/or refereed conference papers, citations of published work, published innovations in clinical practice or creative and/or artistic works including exhibitions, performances, compositions and recordings of recognised international standard, research grants and awards" *(UKZN, Division of Human Resources & Equity, 2008).*

The document *(UKZN, Division of Human Resources & Equity, 2008*, p. 2). defines Teaching as:

> "the creative or scholarly activity which draws on professional and disciplinary expertise, including any clinical or professional experience to enhance the opportunities for students to learn and develop academically, particularly in their chosen University degree programmes. Teaching is

revitalised by research, scholarship, consultancy and professional practice" (*UKZN, Division of Human Resources & Equity, 2008, p. 2).*

The next section will discuss the activity of research and teaching done by academics in more detail.

1.4.1 Academics as researchers

Research production is dependent on a cohort of researchers that are active. Universities or institutions of higher learning essentially produce two outputs: research and degrees. It is commonly known that universities endeavour to produce or award degrees first, and then produce research, but in reality the research production is their main endeavour. Increasingly, the task of teaching is seen as a necessary activity, which leads to generating research revenue. The amount of research and the quality of that research produced has increased over the years.   "Given the increasing importance of science, technology, engineering and medicine (STEM) both to governments and to business, their investments in this area has increased" (Carrim, 2013, p. 8**)**.   The other output of universities is to produce degrees and within those degrees are a research component and the main purpose of that is to prepare and train the researcher of the future. Apart from the undergraduate degrees there has also been a huge growth of postgraduate degrees – Masters, Masters in Business Administration (MBA) and Doctor of Philosophy (PhD). The academics at the universities direct and undertake the research and most are involved in the teaching, the two key tasks that drive the outputs.   "Given the superiority of research in university reputation and ranking, the research output of academics are an important consideration in their selection and their teaching role is given minor consideration" (Kyvik, 2013, p. 531). It is doctoral students that are most valued as the budding future academics, and frequently research collaborators while undergraduates are too often seen as a "necessary labour that, with promotion can be allocated as a responsibility to junior staff. Given that the tenure,

promotion and reputation of academics are the basis of which they are measured for their research output, this shift of priority from teaching to research is understandable" (Miller, 2011, p. 436; Sax, 2002, p. 424).

In the university context, when reference is made to 'researchers' this usually refers primarily to academic staff, researchers and postgraduate research students and are those that are engaged professionally in research at a senior level. This group of researchers is not limited to the university or HEIs but it would also include researchers that work outside higher education. This group of researchers are integral to the university and carry the substantial responsibility of producing the university's research capability" (Kyvik, 2013, p. 533). In the university's view, the needs of researchers will reflect a qualitative difference between them and other information users. This is an important issue that libraries must consider especially when there are shared materials and common structures. Researchers are both producers (authors) and consumers of the research output.

Postgraduate supervision is a multifaceted, specialised and individualised form of teaching. UKZN recognises this task as being of essential importance to the academics not only for their personal and professional growth, but also in growing new researchers (social). Academics with doctoral degrees are required to supervise a number of students per year and this number is unstipulated, but is a requirement for promotion. Supervision is a personal and social activity with relationships forming between student and supervisor. Through this activity, high level human resources are developed.

The pressure on academics to conduct research is accompanied by the move to a substantially digital environment with some fundamental changes in the way libraries and their users operate. The accomplishment of the university library is not determined by how well these academics use the library but by the knowledge gained as a result of using the library (Bennett, 2005). The knowledge gained by library use has an effect on the research production of academics.

1.5 Research production

During the last few years, the research productivity of academics and researchers have been given significant consideration. This is justified since productivity is often used "as an index of departmental and institutional prestige and is strongly associated with an individual academic's reputation, visibility, and advancement in the academic reward structure" (Creamer, 1998, p. iii).

Probably the most critical indicator of knowledge production is research productivity. The research undertaken by UKZN academics is reported in the *Annual Report*, which records titles of graduating student's theses and dissertations, staff and senior student's contributions to national and international journals, book publications, conference papers delivered and contributions to the Institutional Repository. The engagement of research places substantial demands on HEI's with a consequent impact on the "qualifications and quality of staff, research infrastructure, the quality and availability of postgraduate students, and the quantity and quality of research outputs" *(UKZN, Research Office, 2007b*, p. 1-2).

One national benchmark for research productivity is the South African Post-Secondary Education (SAPSE) units generated through publications in accredited journals. Research productivity at the UKZN is measured by the University Research Units system. The total productivity units include publications such as journal articles, editorials, books (including chapters in books), monographs, conference proceedings that are refereed and published as well as successful Masters and Doctoral supervision. The University also has embarked on a strategic drive to encourage all academics to engage in research and publications, which are supported by the Research Incentive Scheme of productivity awards paid directly to researchers for their accredited research publications. *(University of KwaZulu-Natal Research Office, 2007*b, p. 9). The 21st century has also brought some challenges to institutions of higher education – with pressure on academics to obtain funding and a

rating. This rating is conducted by the National Research Foundation (NRF). The Foundation has a rating system which provides a benchmark for research standing, this opens academics to evaluation by their peers, nationally and internationally.

There is pressure on academics to publish to enhance their professional reputation, increase their mobility, advance their careers and more importantly the pressure is being placed by their institutions to increase their rankings and research outputs, comply with government policy and benefit from the government funding for research output (Leachwood, 2013; Miller, 2011).

As Creamer (1998, p. 1) observes: "publication counts remain the dominant method of evaluating most faculty, with traditional measures of output being valued more highly than others". These issues and questions are significant. The profile of academics in South Africa has remained so stubbornly standardised because these academics will not give up the traditional measures of research productivity. The Council for Higher Education (CHE) (2006, p. 35) Size and Shape document states that for an institution to produce high quality research it requires

> "staff with suitable qualifications and quality that can produce high-level peer-reviewed research; the total staff with doctoral degrees – the doctorate serving as a yardstick to perform independent research and supervision of high-level research; postgraduate students with wide-ranging and progressive research involvement; the enrolment of a sufficient number of full-time equivalent (FTE[1]) students at Masters and Doctoral degree levels".

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[1] An FTE student refers to the enrolment total taken by the course load carried by a student. "This can be illustrated in the following examples: (1) If year one of a Bachelor of Arts programme requires registration for four courses, a student enrolling for the full curriculum would be counted as a single FTE unit; (2) a part-time student who is registered for one third of a standard curriculum would be counted as 0.33 of an FTE enrolment. A student registering for only 50% of the required courses for a year of a particular qualification would be regarded as 0.5 of an FTE enrolment" (Bunting, 2013, p. 36).

With the merger of the University of Durban-Westville and the University of Natal, the challenge for the School of Education was to ensure that its academics would attempt to address what may be considered a large research backlog. This has meant creating space and opportunities for staff to undertake research, gain their doctorates and publish while sustaining increasing demands for initial and continuing professional teacher development through their teaching and research from reception or early childhood development to higher education.

Within the vision of UKZN to be the premier university of African scholarship, UKZN is considered to be a university led by its research endeavours and achievements. Research is therefore a key constituent of the University's mission, goals and strategies. The research produced has to be of the highest quality with the necessary support and infrastructure made available to enable this proliferation and growth of research. Postgraduates and researchers are provided the necessary training for their development and that this is able to be produced in a vibrant, supported and committed environment.

In 2003, the Department of Education issued new, internationally benchmarked techniques for measuring research output. It has strategically altered its funding formula for higher education to provide significant financial incentives to institutions that attract and graduate postgraduate students, and produce an increasing amount of high quality research. The Department's desire to transform the demographic profile of both the populations of researchers and of students is also clear in the same 'dashboard' of funding indicators (*Ministry of Education,* 2003, p. 5). The public universities in South Africa benefit directly through the research output of their staff.

There is circumstantial evidence and suggestions at HEIs, especially universities that their academics are offered incentives to increase the research productivity through publications as well as encouraging postgraduate students, visiting scholars and fellows to engage in

research and produce research to increase their research output. A possible reason for their growth in research output is the increased productivity units, meaning financial awards that can be earned by such publications. Individual authors are rewarded for publishing in accredited journals and this translates to an increased production of research.

The financial award that is offered is based on publication units and this is different for each type of research output, i.e. chapter in book, journal article and so on. In 2003, the new funding framework was promulgated and this came into effect at HEIs in 2005. This new framework introduced significant changes in the way funding was awarded for research output. One of the changes introduced was that for each publication unit, there was an increase in the financial award and as a result there was a direct association between the research outputs and the financial reward (*Ministry of Education, 2003; Council on Higher Education, 2009*). The new funding framework has directly affected the funding from the output of articles in scientific journals. The authors of these journal articles are only rewarded if their publications appear in journal titles in the following indexes sanctioned by the Department of Higher Education and Training (DHET) namely the International Bibliography of Social Sciences (IBSS), the Institute of Scientific Information (ISI) indexes: Art and Humanities Index, Science Citation Index (SCI), Social Science Citation Index (SSCI) as well as an approved list of South African journals that do not appear in these indexes.

This is an important consideration for libraries, to stock these journal publications, especially those listed in the indexes. This responsibility is two-fold for the libraries, one is that the accredited journal is available for use by researchers, in print or electronically to comply with the publication requirement and secondly, that it is available for use, so that the researchers as authors know the requirements for publishing in them.

Research is funded from a number of different sources. Firstly, the research output of HEIs are funded by the Department of Education (DOE). Secondly, research output from individual researchers and research projects across the HEI's or other research centres are

funded by the National Research Foundation[2] (NRF). Thirdly, funding is also available through a number of programmes from the Department of Science and Technology (DST), other governmental departments and units, the private sector and a host of national and international funding agencies. Funding is awarded to HEI's based on how much research they produced as well as the research output (in the form of theses and dissertations) done by the postgraduate students – the Master's and Doctoral students. There are systems in place to measure the research output following a set of prescribed norms, which includes the number of teaching and research staff (permanently employed, not contract) at each institution. Private HEI's have a different set of prescribed norms and staffing levels and the quantity and research output levels are different when compared to the other HEIs. "In 2004, institutions were allocated different benchmark for the ratio of weighted research output units to permanent instruction and research staff" (*Council on Higher Education*, 2009, p. 66).

Research is a national and international undertaking and for those researchers that want to pursue higher professional standing and prestige, they also have to meet international standards and international requirement for increasing their research output. Similarly, in June 2005, the Department of Science and Technology convened a conference on *Human Resources for Knowledge Production* in Cape Town, that adopted a six-point action plan that included recruiting and retaining more postgraduate students, improving the environment for research, improving the research infrastructure, enhancing funding, emphasising African science and technology, and, significantly, establishing 'a programme to enhance e-research resources for all South African researchers' (*Council for Higher Education*, 2006, p. 3).

As a result of these pressures to produce research and increase the research production from the DHET, HEIs have had to introduce changes and these point to the 'corporatisation' of higher education. The 'traditional' values and beliefs and institutional autonomy of HEI's are being subjugated (Barnett & Griffin, 1997; Biggs & Davies, 2002; Gaita, 2002; Maslen &

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[2] "The NRF was established as an independent government agency, through the National Research Foundation Act (Act No 23 of 1998) with a mandate to promote and support research through funding, human resource development and the provision of the necessary research facilities all fields of science and technology and indigenous knowledge (www.nrf.ac.za, ¶2)".

Slattery, 1994). As a result of this subjugation, there has been shift of power from the academics (researchers) to the central university administration because traditional values and practices and philosophies, such as face-to-face didactic practices, pure research and community engagement, collegiality and academic freedom, which are vital activities of higher education, are changing the nature of the higher education (Bentley, Habib & Morrow, 2005). Universities are seeing students as consumers; increasing the pressure on academics to do research with various systems of measures in place; increasing the pressure for graduate throughput and commercialising the research done. The challenge for HEIs then is to find a balance between these two practices. This could mean a shift in thinking for libraries and librarians because of this balance between commercialisation and service to learning.

1.6 Library spaces: from service to learning

Technological advances and the accessibility of online information resources have transformed the way that researchers conduct their and this in turn has had a knock-on effect on the services that an academic library has to provide to these research communities. There was a paradigmatic shift of libraries from physical to virtual space caused by the revolution in ICT. This shift has also been influenced by the way in which higher education's teaching methods has moved from that of a philosophy of teaching (classroom, face-to-face, online) towards learning – teacher content to student created content. There is a wealth of high-quality material that can be accessed electronically but academics at HEIs are not yet at that stage where they are able to access all this material from their offices, desktops and other devices.

This change in academic libraries is "from a service to a learning culture" (Bennett, 2005, p. 11). Newer, quicker and more powerful ICTs are driving the change in academic libraries. Academic libraries are also changing as a result of the way in which knowledge is produced, organised and stored, and the availability of material through open access and open knowledge. As a result there are new ways in users use the library. These virtual services

and programmes means that the user does not have to use the physical library or have reason to visit the library because the library can be access on the user's desktop and other devices and used anywhere and anytime.

The library has a long and reputable tradition of being a service place, where resources are stored, organised, managed and preserved for all of its user – current and future. The library has become the place where learning is the main activity due to the social dimension of learning and knowledge, and the emphasis is on encouraging and focusing these social exchanges of some person or group of persons so that information is converted into knowledge. Therefore reconceiving the purposes of the library means shifting it from its service culture to a learning culture.[3] The library's development principles take into consideration the social aspect of learning but the information for the planning is drawn from the operational: service descriptions, statistics, inventories of space and facilities.

Nonetheless, there is a dearth of high-quality resources currently available electronically. The questions then arise: What does this far-reaching changing of culture mean for academic library space that has to formed and re-designed? What then, is the purpose of the physical library when there is no requirement for it to be a storehouse of resources users can access it from their desktops without ever having to enter the physical library to find information resources. As a response to this argument the researcher argues that there are implications for library space given the development of information technology. The definition of a traditional library is a place with a collection of physical information and it is located within a geographic area. Since information technology has touched every aspect of scholarly publishing and library operations, it inevitably has implications for library space Oppenheim and Smithson (1999, p 110). The resources in a digital library are made up of those that are born digital, that was originally created in an online format, such as electronic journals, electronic books and databases and those that were not digital in origination but were later digitised, such as manuscripts and print. "A digital library can distribute its

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[3] Peter Lyman's (*Change*, 23, 1991) essay about the crisis in scholarly communication that required a fundamental rethinking of the place and function of libraries: "The Libraries of the (Not-so-Distant) Future".

information across a network and users can access information in the same way. Since many institutions now have a digital library element that exists alongside the traditional library, they are neither entirely digital nor entirely traditional. Such libraries have been dubbed 'hybrid libraries'" (*Higher Education Funding Council for England (HEFCE)*, 2002, p. 10; Pinfield, et al., 1998, p. 1; Rusbridge, 1999, p. 19). The modern-day library users has to function in a space where there is a hybrid environment, a combination of electronic and print-based sources working alongside each other.

As a learning place on campus, the library is located in a significant area and occupies a large space. For a long time the library building has had both substantial functions and symbolic meaning, as a place in which people appreciate reading, shared discussions, use computers to access the Internet and other online resources, and at the same time appreciate artwork and heritage, and reflect. Nowadays more and more teachers and students also use libraries to discuss and share thoughts with each other. The libraries have become "a forum for students to collaborate, enjoy fellowship, engage in healthy debate, create and challenge ideas, and experience learning and discovery in a multitude of meaningful ways. Good design supports these activities" (Sens, 2009, p. 1).

In the traditional library, the processes of acquisitions, circulation and cataloguing have all been automated and have created an electronic or online library whose main point of access for users is the electronic catalogue or commonly referred to as the online public access catalogue (OPAC). In the online library, access is provided to all the resources, electronic as well as the print resources and in this way the physical collection is given emphasis. In the digital library, the emphasis is different and the notion of place is no longer significant and in time this will eventually fade. There is a simultaneity of traditional (print) and online resources and physical access to these digital resources is provided through a network gateway provided by the library. The development of the hybrid library provides libraries with the expanding possibilities of creating new designs for libraries and this will be an important element in the teaching process.

The design and architecture of academic libraries have changed in the last few years because of the advances and development in ICTs and changes in teaching (Bennett, 2003; Bennett, 2005; Bennett, 2011, Foster, 2014; Niegaard, 2011). Academic libraries are in transition from repositories for printed material to participants in scholarly activity. This new role is a product of several current trends that are converging from different reactions:

- Rapid recognition of the Internet and digital technologies as essential to academic research and communication;
- Inflation of print journal prices;
- Emergence of electronic publishing, including open access as an alternative to print media;
- Affordable broadband transmission;
- Portable computing power capable of connecting to local networks or any information source available on the internet ;
- Mobile technologies .(Bazillion & Braun, 1995).

The desktop is becoming the predominant method of access for researchers who are electing to access online information from their professional space – the office but also from their personal spaces – their homes. The nature of information resources is changing and with that the spaces that libraries occupy.

1.7 Library spaces that are shifting to digital spaces

Globally in most HEIs, there is a requirement to use digital media for teaching, learning and research, now resulting in using a virtual learning environment (VLE). Digital spaces can prompt academics to see knowledge not as something static and located in books, but rather something that is rich, varied, ongoing and contested. Knowledge to go, knowledge on the move is exemplified by open-source systems and specifically Web 2.0 technologies (Savin-Baden, 2008, p. 81). Digital spaces are those that continue to be on the move, spaces that change with and through technology. The importance of such spaces in academic life is

that they are changing learning in ways that as yet few of us understand. Yet pedagogy and digital change need to progress and inform one another together, not separately.

Furthermore, academic work is not bounded by the office and department. What are real hours in academic life in the context of workload management? It differs across disciplines and is not confined to the office and department (Churchman, 2009, p. 509; Savin-Baden, 2008, p. 10). Academic work can happen at a conference, at home or in the office or in the Library. Likewise the learning can happen at a conference, at home or in the library due to ICT. Given the expanded library design, a theoretical framework which allows this vision is proposed.

1.8 Theoretical framework for the study

The theoretical framework for the study is Lefebvre's theory of space. Lefebvre's major work the *Production of Space* was an English interpretation of the French "*La Production de L'espace"* published in 1974 whereby he presented a triad of three concepts: lived or representational spaces, representations of space or conceived spaces and perceived spaces or spatial practice. This triad will be used to elucidate how academics use the library space and this changes as their conceptions, perceptions, and lived experiences change.

The concept of space and place is a complex one and the use of the theory of space was found to be suitable because it operates within the element of time, and is of sociological interest because it looks at how people or social subjects relate with each other. I will be drawing from Henri Lefebvre's three concepts of space which popularised the idea of space in Geography. The conceptual triad positions the mental activities of the mind (in conscious) with the life of the body and the lived experience.   Researchers and social scientists were writing about space in architecture, planning and geography. His major work the *Production of Space* was an English interpretation of the French work "*La Production de L'espace"* that was published in 1974, but the English interpretation was done in 1991. This triad will be

used as a strategy or instrument to analyse the concept of space in libraries. But the concept of the digital or virtual space (or non-physical) was not around when he developed his theory (Milgrom, 2008; Relph, 1976; Schmid, 2008; Soja, 1989). Web 2.0 (World Wide Web, Facebook, Twitter, Blogs) and Web 3.0 (content management systems, Flickr) technologies only came about in the last 20 years, in the early 2000s.

This theory of space will be pursued later in Chapter 3. My discussion about space will not only be confined to the built environment - which can be reconstructed, navigated, lived and experienced by users of that space but also of the virtual space. Space is not static, but is concerned with the relationships between physical objects and people. My discussion of space will also encompass the way it is experienced through the imagination, in the mental realm. When objects and people interact through the physical dimensions of space, the mental dimensions of space and within the dimensions of time, this is spatial practice. I will employ this understanding of space in my discussions of academics engagement of the library space.

The characteristics of specific places are understood within the social relations of people. There is a suggestion that the places and spaces in which academics conduct their teaching, research and administration and other tasks – including the facilities, the technology available, the furnishings – change with their many connections and relations they have with that place. As Lefebvre states "space is continuously produced through the vibrant interconnections between and among places and social relations" (Bondi, 2005, p. 142). Studying library spaces through the theory of space, which allows for the adoption of a trans-disciplinary approach is critical for an understanding of the workings of the space and will provide an insight into the topic.

1.9 Research Focus and Questions

1.9.1 The purpose and objectives of the study

The purpose of study is to explore how a group of academics in higher education understand library spaces.

To achieve the purpose, the following objectives were formulated:

1. To identify the academic users of library space.
2. To explore their understandings of this library space.
3. To theorise this understanding of library space.

1.9.2 The critical questions of the study

Arising from the objectives, the following critical questions are asked in this study:

1. Who are the academic users of the library space?
2. What are their understandings of this library space?
3. How can this understanding of library space be theorised?

One aim of research is to increase knowledge (Gibbons, *et al.*, 1997, p. 182). Since this study focuses on the academics' understanding of library spaces, the significance of the findings will increase knowledge in the field in the following ways:

1. It will provide information on the current practices and experiences of academics; and
2. It will provide insights into how the library space, physical and virtual is used and will guide the library in making the necessary changes accordingly.

The critical questions tried to establish the understanding that academics' have of the different library spaces that are available, that are physical and digital. They tried to explore how academics understand the library space and how they use or do not use this space; the physical space of the library, the conceived or perceived spaces and the lived space, the

collections, resources and services. These draw on the notion of space – physical space, mental space and lived space. How can this understanding of library space be theorised and why?

The issues of credibility, trustworthiness and transferability of the study are discussed in the next section.

1.10 Credibility, Trustworthiness and Transferability of the study

With qualitative research as well as quantitative research, the concerns of credibility, dependability and transferability, validity, reliability are critical in evaluating research (Check & Schutt, 2012, p. 82; Lodico et al., 2010, p. 173). This section discusses some research aspects that make this study credible, trustworthy and transferable given its contextual, methodological and theoretical limitations. *Credibility* refers to: "whether the participants' perceptions of the phenomenon under study match up with the researcher's portrayal of them in the research report" (Check & Schutt, 2012, p. 81; Lodico *et al*., 2010, p. 169). The research methods employed by the study ensure that this aspect has been addressed with the generation of thick descriptions of the research location and the research participants' understandings regarding the library spaces (see Chapter Five and Six).

To ensure that that the integrity of the study was maintained, every effort was made to ensure that the findings were grounded in the data, and remain true to the data from a definite position (Terre-Blanche, Durrheim, & Painter, 2006). Each finding (theme) is supported by the data (Marshall & Rossman, 2006; Braun & Clarke, 2006). The themes with all the interpretations and conclusions are presented in way that is supported by the data as well as literature. To prevent my personal biases a description of the research findings is presented. *Trustworthiness* (dependability) "refers to whether or not one can track the procedures and processes used to collect and interpret the data" (Lodico *et al*., 2006, p. 275). Due cognisance has been given to this aspect by providing a comprehensive

explanation of how data production and analysis were done. An extensive explanation of the procedures, processes and methods has been given in Chapter Five.

Transferability "refers to the degree of similarity between the research site and other sites as judged by the reader" (Lodico *et al*., 2010, p. 173). The results of the research findings, both qualitative and quantitative cannot be generalised to different settings as this is a case study, but it is possible that this can be useful in other similar settings. That is described as transferability of the research findings from one setting to another similar setting. It is argued here that such transferability is possible through a rich and detailed description of the context and phenomenon under study. This thick description allows for *particularisation* or "coming to know the particularity of a case" (Stake, 1995, p. 39). It should be borne in mind that the disciplinary activity and its resulting information-seeking behaviour is not homogenous among academics, they differ along disciplinary lines. However, insights gained from the particularity of this case study or context can be transferred to similar cases or contexts (Lodico *et al*., 2006, p. 269; Maree, 2016, p. 81; Thomas, 2016, p. 4). This is, therefore, for readers to make the link.

1.11 Organisation of the thesis

Chapter One introduces the study by discussing the orientation and background and describes the rationale for the study and profiles the context of the study, It also describes the theoretical framework and looks at the research focus and questions and issues that make this study credible, trustworthy and transferable. Higher education has seen a transformative change in the way that students learn and academics teach and do research in response to the effects of globalisation and internationalisation. These are due to the revolution in information and communication technologies. The library needs to make sure that they engage with academics and researchers and provide them with the resources, services and training they require as the university's reputation and financial security rests on the funding received and rating of the university. There is a shift in academic libraries from being a provider of services and facilities to the provision of a learning culture. It is

believed that this study will contribute to an enhanced understanding of the learning and support function of the library in the provision of services, and to find out if these services and resources are being used effectively. The critical questions clearly lay out the limits and scope of the study.   The discussion of the issues of credibility, trustworthiness and transferability of the research findings follows, concluding with an outline of the thesis chapters.

Chapter Two reviews the literature and lays the landscape and backdrop for the study. It pays particular attention to the higher education landscape (Altbach, 1996; Barber, Donnelly & Rizvi, 2013; Bentley, Habib & Morrow, 2006; Carrim, 2013; Sanderson &Watters, 2006) with the emphasis on globalisation and internationalisation. Attention is also focussed on the university's research agenda which encourages productivity by academics and introduces measures to assess research as well as to incentivise research production (Carrim, 2013; Department of Education, 2015; Gultig, 2000; UKZN, Research Policy, 2014). HEI's are under pressure to operate like businesses and research is commoditised (Barnett & Griffin, 1997; Biggs & Davies, 2002; Bentley, Habib & Morrow, 2005; Gaita, 2002). There is pressure on academics to publish and the spin-off of that is that the library becomes the core of that exercise. The changing nature of library spaces is reviewed whereby the library becomes the new hub with ICT sharing that space with the traditional resources in a space that is comfortable, convenient and collaborative (Bennet, 2005; Eigenbrodt, 2008; Engel, 2004; Freean, 2005; Niegaard, 2011; Latimer, 2011). The library is viewed as a gateway to resources. It reviews the physical and virtual library and the usage of these spaces by academics and how the relationship between library and researchers enhances the value of the library and where convenient access is provided to high quality research (Bryant, et. al., 2009; Klentzin, 2012; Raju & Schoombee, 2014; Rupp-Sarrano & Robbins, 2013; Schonfeld & Housewright, 2013).

Chapter Three theorises the study of space through a discussion of Lefebvre's theory of space. Through these lenses, the spaces of the library are theorised as lived, perceived and conceived spaces. The conceptual triad refers firstly to the physical space or actual lived

experience of space, secondly to how the space that is physical is perceived (seen, felt, smelled, heard) and maybe perceived differently by different people and thirdly to mental activity about space, the thinking, imagining, reflecting, planning about space. Lefebvre's conceptual triad is used as an analytical tool to explore the relationship between academics and library spaces. Library spaces are social spaces that are produced and experienced and that are also being produced through the experience of users (Carp, 2008; Lefebvre, 1991; Relph, 1976; Soja, 1997; Tuan, 2001). The discussion foregrounds Lefebvre's spatial triad as a significant contribution to the understanding of space. Other theorists such as Soja (1997, 2001) and Relph (1976) also enhance and enrich the understanding of the spatial perspective.

Chapter Four lays out the research methodology and research design used in the study. The descriptive case study was the overarching research design for this study that examined a particular phenomenon – use of the library space, both physical and virtual in a real-life context of the academic staff's research behaviour. Within an interpretive paradigm, it discusses the data production process before proceeding to the data analysis process. A mixed methods design was employed for data generation which used both quantitative and qualitative methods. The research was carried out in two phases – macro (population) to in-depth (individual). Phase one was an online survey of the entire population of academics in the School of Education at the Edgewood campus, UKZN and phase two was semi-structured interviews with 7 purposively selected academics from the School of Education. The survey helped inform the case study. The discussion then focuses on the analysis process, piloting the study, methodological limitations and ethical considerations of the study.

Chapter Five and Six present the first level analysis and interpretation of the research findings. The findings are based on data generated from the online survey and interviews. The online survey questionnaire gathered data on the academics presenting a portrait of their personal and research profile, the academic library user identity. This was categorised according to the personal, professional and social spaces used by academic staff. Themes that emerged from the findings were that academic staff's choice of where to work was

mainly from their offices for teaching and administrative tasks but their homes for research. They spent most of their time on research. The information resources were used predominantly because of the convenience and flexibility and mobility to work from off-campus. When they do visit the library, it is for inter-library loans. The technology is the driving force for the location of where they access information – their offices and homes with the necessary infrastructure. The library was shifting from a place used by academics to a place used by students. The findings further revealed that academics had limited awareness or knowledge of library resources and they found resources by trial and error, through library training sessions or through their students and research assistants.

Chapter Seven presents the insights gained from the study and the findings. The study propositions a spatial model of understanding library spaces and 4 significant themes emerge. These are a convergence of the academic library user identity with the library identity, as academic do not have a specific or distinct library identity and their understanding and use of the spaces is constantly shifting as their experiences change. The relationship between the library and academics is shifting and operates in a new space that is not fixed. The model illustrates that the Library has a physical, virtual and institutional presence. There is an ongoing relationship between these three contexts and the library. The space is shifting from a physical space to a learning experience. The academics also operate within this physical, virtual and institutional context. The changes in society, ICT, pedagogy, HEI's and universities are reflective of changes in the library domain. The four significances are firstly the convergence of the academic identity with the library identity. The academic identity is fluid and academics have become emergent technology users. There are changes in the work styles due to advances in ICT, and the way students learn and collaborate. The second significance is the synergy between esoteric learning spaces – service spaces to learning spaces. Academics presented their traditional views of libraries and their histories and visions as perceived physical spaces rather than as a conception (mental space) or conceived spaces. Thirdly there is a fusion of the physical and virtual library. The physical space is less-and- less important to the academic staff. Academics have most of the facilities like computers, printers and photocopiers available in their offices or homes and do not require the library for these purposes. The physical space is also not

conducive for their use. Therefore there is a greater reliance on the virtual library. The link between the library and electronic resources is absent from their understanding but there is a recognition that the Library facilitates access, although they do not seek assistance from the library when they experience difficulties with resources. The final significance that emerged was that academics do not have a vision for the library, but they know that it is necessary for the collection and preservation of information, for their students and for the university. The library operates within a shifting space.

1.12 Summary of the chapter

Chapter one presented an introductory synopsis of the study. It states the rationale and context for the study, and the questions that drove my research and outlined my personal relationship to the study, and the order in which the chapters appear. There are various understandings of library space and academics, but my understanding of library space is the physical building housing the collection, services and facilities and the digital space consisting of electronic access to the databases, journals, books and open access electronic information.

Institutions of higher education are confronted with demands for a research system that is highly productive, and at the same time extending the number of researchers to transform the production of knowledge, to ensure that this research is excellent and protect the institutions reputation and ranking and to increase collaboration between local, regional and international research producers as well as to ensure that this research has impact on the society. This in turn places demands on the library as a support service to the university research system. An important requirement in the retention of researchers and in the nurturing and development of new researchers and postgraduate students is the provision of a supportive environment, in particular the provision of appropriate information technology (IT) and a well-provided library with resources and space. The university system meets the demands in many of these areas.

The major challenges facing universities is building a team of researchers that are active and diverse. The literature suggests (Barber, Donnelly & Rizvi, 2013; Bentley, Habib & Morrow, 2006; Baatjes, 2003; Carrim, 2013; Gultig, 2000; Reddy, 2004) that these institutions are responsible for producing nearly 90 per cent of all publications and 40 per cent of all basic science. Academics and researchers have the responsibility of supervising and seeing to fruition the research of Masters' and Doctoral graduates. This research contributes to the South African economy and society and academics understand that their contributions are important and understand their position well in this scheme of things. The quality and qualifications of academics is a critical element in the success of HEIs to meet their institutional goals of research, teaching and learning. Academics are measured in many ways and their research and teaching output is an indication of their quality but it also illustrates the opportunities and support that are available to this cohort of staff.

The next chapter reviews the landscape of higher education with an emphasis on globalisation, corporatisation, the research agendas of HEIs and library spaces – physical and virtual. The literature review revealed that there is an abundance of research on library spaces, their architecture and design, with many descriptive assessments that conclude with design proposals, how spaces are being reconfigured to accommodate ICT, social and technological networks, collaborative and group learning and globalisation. Attention will also be given to studies on the information-seeking behaviour of academics as this is changing due to the accessibility and availability of electronic resources, innovative ICT's, and changing methods of teaching and learning. The literature also revealed a lack of information on how academics are using this changing physical and virtual space, and what effect and impact it is having on their research endeavours.

Chapter Two: Depicting the landscape: the backdrop to the study

2.1 Introduction

This chapter reviews the landscape of higher education with an emphasis on globalisation, corporatisation, the research agendas of HEIs the changing nature of libraries and their spaces and the usage of these spaces by academics. It locates the thesis within the existing literature, reviewing the theoretical and empirical work on which it is based.

From the literature study, it was possible to identify an abundance of research on library spaces, where space was written about as an infrastructural requirement for housing the collections then moved to a requirement for the retrieval of information and ICT and recently for the social and technological networks. Much has been written about the architecture and design of libraries (Aabo, 2012; Bawden & Beard, 2012; Bennet, 2005; Eigenbrodt, 2008; Freeman, 2005; Engel, 2004; Niegaard, 2011; Ranseen, 2003) and the reconfiguration of the space (Bryant, Matthews, & Walton, 2009; Freeman, 2005; Houlihan, 2007; Stewart, 2011), the changing nature of libraries with the introduction of information technology (Latimer, 2011; Temple, 2008), collaborative learning and globalisation (Silver, 2007; Edwards & Usher, 2000). Some studies have also concentrated on the information-seeking behaviour of academics (Bonk, 1995; Guthrie & Housewright, 2011; Hart, 1997; Rowlands & Nicholas, 2008; Rupp-Serrano, 2013), their information needs and requirements, but no comparable study has been done on how academics are using this changing physical and virtual space, and what effect and impact it is having on their research endeavours. Library studies of spaces are descriptive assessments that conclude with design proposals. The effect of the increasing availability of online resources, innovative technology, and changing methods of teaching, learning, and research on design is also considered (Latimer, 2011, p. 113).

2.2 Literature review

Academic libraries will struggle to get ready for the future or to position themselves on campus until they recognise their evolving roles in the present-day learning and research environment, which is immensely different from the environment the library operated in a few years ago (Troll, 2001, p. 16). The face of the libraries is changing as a result of the university's research agenda, the higher education landscape and the effects of globalisation and internationalisation as well as the changing requirements of academic staff. A literature review is conducted to report on the related literature in the area under study and to ascertain that no similar studies have been undertaken in that area. It reviews the existing literature and demonstrates how this study will add to the current literature, identify gaps in the knowledge and attempt to answer the research questions. After a search of the online and printed resources, the five main aspects of the research emerged; namely:

- The landscape of HE in South Africa;
- The university's research agenda;
- The library's, use of the physical and non-physical or virtual spaces;
- The changing nature of libraries in this age of technology and globalisation; and
- The use of the library by academics, namely their usage of information sources, when, how and why? What requirements they have for this usage and what are the developing trends accessing, locating and using information resources?

The review will briefly outline globalisation and its accompanying policies and in particular the higher education policy changes that have taken place and what these changes have meant for academics and research (Jauhiainen, Jauhiainen, & Laiho, 2009). A broad description of the higher education landscape and the issues and challenges it is facing (Altbach, 1996; Bentley, Habib & Morrow, 2006; Sanderson & Watters, 2006), the university research agenda (North, 2011), globalisation (Gatfield, 1995), and internationalisation (Kishun, 2007) have been selected as part of the literature review and its impact on library spaces (Jankowska, 2004); Research support provided by libraries (Wisneski, 2005; Ovadia, 2009; Zhang, 1999, Adams & Bonk, 1995; Borgman, 1985); the relationship between technology and learning, impact of physical space, Libraries as a space (Bennet, 2005;

Demas, 2005; Shill & Tonner, 2003; Shill & Tonner, 2004) will also be considered.   Much has been written on library usage, information needs and behaviour of students, both undergraduate and postgraduate or graduate students (as referred to in the US), but there was relatively little written on academics and their library usage, information needs and behaviour and what has been written has been limited to the institutions in the developed countries but very few of those in the developing countries.

Since the beginning of the Internet, and especially since the year 2000, much was written about the changing academic environment and the impact this will have on libraries. The next section investigates the higher education landscape.

2.2.1 The Landscape of higher education

The discussion of the landscape is aligned to the first objective of the study. In presenting this landscape it is argued that there is a critical link between higher education development and library services, in respect of research, technology and knowledge production (Latimer, 2011, p. 116). A description of the higher education landscape places the study in context with the changes taking place n HEIs. This is located within the country's political, socio-economic transition to democracy. (Fourie, 1999, p. 276) Higher education is integral to the personal, professional and social development of the people of South Africa. To achieve this results, HEIs and their staff especially academics have to make changes, adapt and change their approach in their endeavours. Universities are producers of primary knowledge that make a contribution to society, their cultural, economic and educational growth by way of the new processes and products developed.

For traditional library services to be restructured and developed and new facilities defined, academic libraries have to be aware of what library services and facilities are used and what users' expect of these spaces in the new educational environment.   These spaces are evolving. As the behaviour of the library users and quality of the library services offered are

interconnected, there has to be an awareness of this.   The major arguments that are presented indicate that there is a very strong relationship between libraries and higher education, there is an interface between libraries and publications. The changes and developments taking place in higher education have a domino effect on library spaces. Academic libraries, by definition, exist inside the contexts of the larger academic institutions. As HEI's role changes so too does the libraries' role because the major task of academic libraries is as a service provider ((Miller, Taylor, & Bedeian, 2011). Libraries also have a responsibility to find ways to address and cater for the generation of users that are familiar with technology and the abundance of electronic resources.

HEI's have to operate within a system[4]. As a result of internationalisation and globalisation and the challenges these bring, the HE system has to be competently measured and co-ordinated by the State so that it can create capable staff for the so-called 'knowledge society'. The *White Paper 3[5], a Programme for the Transformation of Higher Education* (Department of Higher Education and Training, 1997, p.9) outlines a system that "planned, administered and funded a single co-ordinated national higher education system, to redress past inequalities, to serve a new social and professional order, and to respond to the national needs and challenges and opportunities". The Paper (1997, p. 31) states that at the HEI's as Research plays an important role, the responsibility for research is as follows: "The production, advancement and dissemination of knowledge and the development of high-level human resources are core functions of the higher education system". It does through the dissemination of knowledge by teaching and research especially collaborative or team research.   Postgraduate study, training and research conducted assists academic and research staff in their development (Aabo, 2012; Budd, 1995; Covert-Vail & Collard, 2012; Sax, 2002).   And the Paper (1997, p. 33) outlines the challenge for institutions are to: " increase current research capacity, protect current research resources, find new sources of research funding, and use all these resources more effectively".

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[4] HE system does not really exist, it is considered a heuristic device or metaphor that helps structure our discussion on higher education issues.
[5] The Higher Education White Paper (1997) aimed to restructure higher education into a single, national coordinated system. The paper locates the transformation of higher education in the broader "political, social and economic transition," which is constrained by globalisation (White Paper, 1997, p. 28).

To achieve this end, the Ministry therefore implemented the following measure and gave the responsibility to the National Research Foundation (NRF) to: "provide early advice on the current state and future needs of research infrastructure and capacity, including institutional redress in the higher education system" (White Paper, 1997, p. 28). The Ministry introduced the: 'funding formula that provided recognition of measurable research output.' The Research Outputs Policy (2015) replaced the previous Policy for Measurement of Research Outputs of Public Higher Education Institutions (2003). The Policy applied to all public HEIs, universities included. This policy aims "to sustain current research strengths and to promote the kinds of research and other knowledge outputs required to meet national development needs" (Strategic Objective: Section 5, *National Plan for Higher Education*) (*Department of Higher Education and Training, Research Outputs Policy*, 2015, p. 3).

This aim is part of the strategic objective proposed by the *National Plan for Higher Education* [6](NPHE), and was one of the visions of the White Paper. The purpose of this policy is to "encourage research productivity by rewarding quality research output" (*Department of Higher Education and Training, Research Outputs Policy,* 2015, p. 4). The intention in the policy was to encourage productivity and to introduce measures to assess quality research. The policy defines research output as: "textual output where research is understood as original, systematic investigation undertaken in order to gain new knowledge and understanding. Peer evaluation of the research is a fundamental prerequisite of all recognised output and is the mechanism of ensuring and thus enhancing quality" (*Department of Higher Education and Training, Research Outputs Policy,* 2015, p. 4). The aim of the legislation and policies was to transform the HE landscape in South Africa that was restricted by apartheid legislation and policies by "… transforming firstly the structure and frameworks of HE and secondly providing new educational policies and legislation; and,

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[6] The National Plan provides an "implementation framework and identifies the strategic interventions and support necessary for the transformation of the higher education system in South Africa. It provides an opportunity and challenge to map a path that locates the higher education system as a significant engine driving and contributing to the reconstruction and development of South African society (White Paper, 1997, p. 13)".

finally linking the functioning and outputs of the sector to national priorities and socio-economic development" (Carrim, 2013, p. 12).

Blom (2013, p. 1) wrote in the *Business Day Live* that*: "*South Africa's tertiary educational institutions are required not only to supply the economy with appropriate scarce and critical skills, but also to contribute to research and development of new technology and with new organisational forms and innovation".   Higher education institutions therefore have to realign their strategic institutional objectives to meet this goal.   "One of the challenges facing the country is the new technology and revitalisation of the academic profession, since the average age of a South African academic is 59 years. Universities should consider using retired academics to strengthen the capacity of the system in the areas of research and innovation" (Blom, 2013, p. 1) Likewise libraries should be looking at ways in which they can address this generation of users, especially in terms of the technology and abundance of electronic resources.

Reiterating the goals set by the *National Plan*, the Chief Director, Chief Mabizela from the University Policy and Development section in the higher education and training department, states that the drivers for research and knowledge production are the doctoral graduates, staff and post-doctoral fellows (Govinder, Zondo & Makgoba, 2013). In order to achieve this goals, HEI's would have to ensure that 75 per cent of its academic would have to hold a PhD, and that these institutions should produce a certain percentage of PhD graduates according to the population. He estimated that to be 100 for every million people.

The last few years saw some fundamental alterations in HE where student learning practices changed, with students working in collaborative groups (collaborative learning) and academics have addressed this by changing their teaching methods and their daily practices saw widespread change (Cranton, 1997; Hartley, 2005; Murray, 2008; Silver, 2007; Strydom, Basson, & Mentz, 2012). Another fundamental transformation was the dramatic change in ICT's, especially with the introduction of the WWW in 1993. It gave users a reason to

connect to the Internet and made this relatively easy as well. The impact on research and libraries was profound with the conception of the library as a service place where information is stored, organised and disseminated shifting to a learning-oriented space. The other was the acknowledgement of the social dimension of learning and knowledge which conceived of the library as a space where the focus is on learning and by enabling these social and public exchanges, this information is converted into the knowledge for its users.

At the beginning of the 21st century there were changes in the social, cultural and economic relations as a result of the developments and advances in ICT. Related to these developments in ICT, the production knowledge and information will drive wealth creation and consequently will lead to social and economic development. Higher education plays a contributing role in this development and growth of information and knowledge societies in South Africa. It does this through the staffing – by developing their skills, providing adequate and appropriate training and research, especially within the international context. Universities have to respond by offering 'occupational training' and a stronger emphasis on applied research (Gultig, 2000, p. 41). HEI's operate in an environment where they are faced with challenges of globalisation, corporatisation, academic freedom and internationalisation.

The next section will present a discussion on globalisation and internationalisation.

2.2.2 Globalisation and Internationalisation

The first part of the literature deals with the changing landscape of HE in South Africa and globalisation and internationalisation is a part of that change. Academic institutions, specifically universities have always been globally oriented as human knowledge cannot be controlled by the boundaries and borders of the nation. Universities have operated in the international sphere through their publications, conferences, visiting scholars and curriculum. It is only when this human knowledge began to be considered as a marketable

commodity that the dynamic forces of this landscape changed (Biggs, 2002, p. 184, Scott, 1998, p. 123).

Global university rankings are an indication of the research capacity and output of an institution and illustrates that it is a global player in HE. Global rankings is a tool that university administrators use when they market and publicise the offerings at the institution. Internationally, UKZN was listed in the four major world university ranking bodies in 2013. It was in the Top 400 in the Times Higher Education[7] (THE); Top 500 in the Academic Ranking of World Universities (ARWU)[8] and Top 600 in the Quacquarelli Symonds ranking (QS)[9]". One of the measures used for ranking is the published output of the institution and the visibility of South African institutions in these ranking bodies. The published output is an important element in the ranking and has to be available and visible on international platforms.

The changing landscape of higher education is also influenced by the internationalisation of its academics and students. The *White Paper for Post-school Education and Training[10] (Department of Higher Education and Training*, 2013, p. 40) describes internationalisation as:

> "Internationalisation takes various forms, including: cross-border movements of students and academic staff; international research collaboration; the offering of joint

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[7] The Times Higher Education (THE) ranking, published by the British journal Times Higher Education with data supplied by the Thomson Reuters Scientific database use international university performance indicators to assess world-class universities across all of their core missions - teaching, research, knowledge transfer and international outlook. The top universities rankings employ 13 performance indicators to provide the most comprehensive and balanced comparisons available.

[8] Academic Ranking of World Universities (ARWU) is done by the Institute of Higher Education, Shanghai Jiao Tong University,China. It ranks universities according to their academic and research performance.

[9] The Quacquarelli Symonds (QS) ranking done by the QS Intelligence Unit annually ranks global universities by various criteria such as academic peer review, student faculty ratio and citations per year.

[10] This White Paper (1997, p. 31) is an important document in the "development of the Higher Education and Training system. It is a definitive statement of the government's vision for the post-school system, outlining the main priorities and strategies for achieving them. It is a vision for an integrated system of post-school education and training, with all institutions playing their role as parts of a coherent but differentiated whole. These institutions include the colleges and universities whose main purpose is the direct provision of education and training and, in the case of universities, the conduct of research".

degrees by universities in different countries; the establishment of campuses by universities outside of their home countries; the growth of satellite learning and online distance education, including online educational institutions; arrangements between countries for the mutual recognition of qualifications; the regional harmonisation of qualification systems; and the increasing inclusion of international, intercultural and global dimensions in university curricula".

Internationalisation is a strategic response to globalisation. Institutions start to change the curricula and learning activities to increase the enrolment of international students. Globalisation brings with it a competition for research funding and foreign students. This response impacts directly on libraries as library collections must reflect this changing curriculum. Access to library resources must also be provided within the institution and externally as well. Libraries also have to respond to the changing student body. According to Kishun (2007, p. 456), the international student enrolment in South Africa "increased fourfold during the early period of democracy, from around 12,500 in 1994 to nearly 53,738 in 2007 (more than 7 per cent of the total higher education student body of 761 090) to 68,000 in 2012". This trend is also apparent in UKZN with 3017 international students in UKZN in 2014, of which 328 were for the School of Education. (*University of KwaZulu-Natal, Institutional Intelligence Reports,* 2014.) A significant number of foreign students from sub-Saharan Africa are enrolled in in South African HEI's. Institutions also start fostering and developing partnerships and relationships with other international institutions. It is without question that the academic environment in South Africa has changed considerably since 1994. As developed countries actively enrol more international students, internationalisation becomes a tactical issue and has implications for South African universities and in turn for academic libraries.

The *White Paper 3[11], a Programme for the Transformation of Higher Education* (Department of Education, 1997, p. 40) defines globalisation as:

> "multiple, inter-related changes in social, cultural and economic relations, related to the pervasive impact of the ICT revolution, the growth of transnational scholarly and scientific networks, the accelerating integration of the world economy and intense competition among nations for markets. These economic and technological changes will necessarily have an impact on the national agenda given the interlocking nature of global economic relations".

The *White Paper* (1997, p. 9) anticipates that "higher education will provide the necessary training, skills, improvements, and knowledge so that South Africans can participate in the South African economy as well as the global economy. Higher education must be "internally restructured to face the challenge of globalisation, and in so doing remove the barriers to access that are created by national and institutional boundaries" (Department of Education, 1997, p. 5). The Paper also outlines how HE's must contribute to the fair reconstruction of society. The principles and goals[12] further reveal the different dialogues that are happening between globalisation on the one hand and empowering the people on the other as well economic needs and democracy.

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[11] The Higher Education White Paper's (1997, p. 40) purpose was to restructure higher education into a single, national coordinated system. The paper locates the transformation of higher education in the broader "political, social and economic transition," which is constrained by globalisation. This national agenda is being followed within a distinctive set of pressures and demands created by globalisation".

[12] The section on goals lists 12 national goals including the "contribution and role of research towards technological and social development; developing "social responsibility and awareness amongst students of the role of higher education in social and economic development through community service programmes"; producing skilled graduates who are competent in critical, analytical and communication skills to deal with change, diversity and tolerance to opposing views; and developing capacity for a more representative staff. It also lists 6 institutional level goals which include democratizing governance; encouraging partnerships with wider society; developing programmes that are responsive to social, political, economic and cultural needs; establishing academic climates that support "free and open debate, critical questioning of prevailing orthodoxies and experimentation with new ideas"; demonstrating social responsibility by "making available expertise and infrastructure for community service programmes;" and building cultures based on tolerance and respect (Department of Education, 1997, p. 5)".

(Barber, Donnelly, & Rizvi, 2013, p. 10) state that:

> globalisation brings with it diversity in the populations, especially in the larger urban areas. Potential foreign students are also assessing institutions globally and based on this assessment, make decisions on where to study and do research. Marketisation has also had a transformatory effect on HEI in the last 30 years and this has an effect on HEI's locally and internationally. The output and outcomes of Universities, both in teaching and research, are a commodity that is saleable and that therefore are subject to market forces.

Globalisation thrives on unrestrained access to current and relevant information. And this information comes at a cost. To meet the institutions and academic needs, academic libraries have to subscribe to and purchase a range of resources. But in this environment of new managerialism[13] and globalisation for South African libraries, libraries have to constantly justify their rising materials budgets to meet the pressure of academics to publish. They are directly affected by globalisation and the rising cost of their resources, because knowledge has become a commodity (University of Cape Town, Witwatersrand, KwaZulu-Natal, 2006). For South African academics to compete in the international market, they need access to resources internationally and the cost of these is exorbitant. Libraries also have to use international ICTs to compete in this global world. This issue of cost of library material will be discussed further in chapter Six.

One of the results of globalisation is that universities are beginning to change their way of operating and using the corporate model. The next section outlines this development.

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[13] Managerialism is defined as "a set of ideas and practices that, under the direction of managers, arrange a group's activities in efficiency-minded ways. Managerialism is, then, much more than the application of management's generic tools and knowledge, it is, rather, a belief that all organizations can only work properly if decision-making is centralised in the hands of professionally trained and "objective" managers" (Klikauer, 2013, p. 2)".

2.2.3 Corporatisation of the university

As a result of corporatisation of the university, there is a spin-off. More publishing is happening. As the library is the repository or storehouse of publications and resources, it becomes the core. The only way to generate funds is to place the emphasis on research, moving away from teaching (Seaman, 2005, p. 307).

Many writers have criticised and disagree with HEI's for the manner in which the institutions are being corporatised whereby the traditional values and beliefs of HEI's are being subjugated by these new practices (Barnett & Griffin, 1997; Biggs & Davies, 2002; Gaita, 2002; Maslen & Slattery, 1994). As a result of this subjugation, there has been shift of power from the academics (researchers) to the central university administration because traditional values and practices and philosophies, such as face-to-face didactic practices, pure research and community engagement, collegiality and academic freedom, which are vital activities of higher education, are changing the nature of the higher education (Bentley, Habib & Morrow, 2005). Baaitjies (2005, p. 2) strongly states that "Education, formal and non-formal, is increasingly being packaged according to qualifications, delivered through pre-packaged curricula based on predetermined outcomes, and integrated within the economic agenda -- an integration framed within a discourse of improving competitiveness, jobs, standards, and quality". He states that: "HEIs are increasingly being viewed as 'inefficient' and 'ineffective' and requiring a revamp because they have been failing, like government schools and technical and vocational colleges to support and develop useful people so that they are able to compete in the local and international economies" (Kuruppu, 2006, p. 609). He reiterates that the: "challenge is the administration of universities and their failure to teach 'useful knowledge', and to ensure that universities have credibility and accountability, the corporate model and culture has been installed" (Baaitjies, 2005, p. 4). Therefore, pressure is placed on HEIs to be managed like corporations with a business model in order to improve the service offered to their constituents. This has had a knock-on effect for academics whereby the knowledge in the form of research has been

commoditised and pressure has been placed on academics to produce more research and has been exemplified in the phrase "publish or perish". There is a push for them to do research, in the form of publications, related to their ranking and reputation and existence at universities. An academic's career is grounded on international recognition by peers, which is obtained by publishing in peer-reviewed and respected journals, and through conference presentations.

A number of writers have discussed the effects on corporatisation on HEIs how the new 'managerialism' undermines the collegiate governance and atmosphere of the academy (Jansen, 2005, Bentley, Habib & Morrow, 2005) and threatens academic autonomy and freedom[14], and that the threat to institutions is internal rather than external, but this is not relevant for the study and is excluded from the review.

Apart from the effects of globalisation, the traditional university is also being impacted by technology.

2.2.4 Impact of technology

The development and advances of ICT is making it easier for one-on-one experiences and experiences at a distance. This technology, along with ubiquitous content and the variety of platforms of ICT (for example video-conferencing, virtual and augmented reality) makes it possible to deliver this experience. The ubiquity of online learning and virtual learning environments offer academics the possibility of offering their class material anytime, anywhere, and is an can replace the classroom and in-person instruction and will impact the way the traditional university does its business. This is adequate reason to reflect on the

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[14] Academic freedom is the "right to become a member of the academic community (subject to merit) without discrimination and to decide the subject and methods of research on the part of the academic; to determine the content and methods of teaching on the part of the community; the right to seek, receive, obtain and communicate information and ideas, and where there are limitations (presumably on things like research using dangerous materials), the academic community should be given special facilities and protection; and the right to co-operate with colleagues in any part of the world (Bentley, Habib & Morrow, 2005)".

way traditional teaching and learning has been offered in HEI's. These online learning and virtual learning tools are the new methods of learning and instruction and are available regardless of location. The new pedagogy will move far beyond traditional lectures, seminars and face-to-face learning because the technology allows collaboration and learning can be done from a distance. The traditional model of lectures, followed by homework, followed by tests and assessment does not have to happen in that way (Barber, Donnelly & Rizvi, 2013, p. 13). This is very evident at UKZN, with the decision that all teaching and learning material from 2016 will be offered on the learning tool, Moodle instead of in print. This impact has important consequences for the Library, which also has to make its presence felt in this environment. Technology also opens up the opportunities for research and collaboration, nationally and internationally and makes communication quick and instantaneous.

The discussion on the higher education landscape then leads onto the responsibilities universities have in fulfilling the research agenda set by the Department and Ministry to meet the country's social and economic needs but also contribute to knowledge production and basic research. The next section will attempt to outline the research agendas of universities.

2.3 University research agenda

During the previous few years, substantial attention had been dedicated to the research productivity of academic staff. The position of the university and it's educational and research assessment outcomes are measured and monitored by a variety of recognised measures. There are many incentives that are being offered by universities and the government to increase research production. This state of affairs is acceptable since productivity is often used "as an index of departmental and institutional prestige and is strongly associated with an individual faculty member's reputation, visibility, and advancement in the academic reward structure" (Creamer, 1998, p. iii). Therefore,

academics work on the quantity of publications rather than the quality of the research because this factor is a determinant in an academic's career trajectory.

Teaching and research output are the two core functions of a university. Universities are assessed in terms of their research and scholarship and in particular their contribution to knowledge and to society through innovative ideas, products and processes (*UKZN, Research Policy,* 2014, p. 5). The strength of a university is thus generally based on student pass rates and throughput and the number of research publications produced, at a normative standard. A well-supported infrastructure that includes laboratories, equipment, libraries and resources are required to meet the core functions of the university. This will also ensure that research and teaching thrives within that environment and attracts good researchers.

In South Africa, the rewards for research output of staff are directly awarded to the universities. The Department of Education (DOE) apportions funds to universities by way of a government funding formula, mainly focusing on the following two key outputs – student throughput and research productivity. Universities have a number of income streams supporting their activities. Currently they are dependent on state funding based on their research productivity, student fees and third-stream income, which means academics have access to the resources of the private sector, individual benefactors, and national and external foundations. But for the state funding, the more detailed *National Plan for Higher Education* (2001, p. 35) lays out the framework for how this will be done and states that "the funding of the HEI's in South Africa must be driven by an equitable access to education for all student backgrounds, the production of quality teaching and research outputs, the maintenance of an acceptable student retention and throughput rate and the production of graduates that will be able to meet the social and economic needs of the country". The *National Plan for Higher Education* (2001, p. 35) identified the

> "need for increased postgraduate output as well as increases
> in research production (books, articles and conference
> proceedings) as key priorities for the sector. It also

emphasised that existing research capacities and strengths needed to be sustained and new centres of excellence developed. Finally, it pointed to the need to accelerate collaboration and partnerships, especially at the local level, in research and postgraduate training".

Publications units are awarded for the different types of research output and the funding from the DHET is based on these outputs. The libraries have to ensure that they stock the different formats of this research output, that is, journals, books, conference proceedings. In 1984, the introduction of the *South African Post-Secondary Education* [15](SAPSE) formula by government was used to award funding for research output at HEI's. The SAPSE formula was revised once in 1993 and in 2004 the *New Funding Framework* (NFF) was introduced (De Villiers & Steyn, 2009). The NFF introduced the total productivity unit count (PU's) as the incentive system. Funding to universities (as it relates to their research activities) was based on these PU's and it awarded the different types of research output such as journal articles, editorials, books (including chapters in books), monographs, conference proceedings that are refereed and published as well as successful Masters and Doctoral supervision. The system is differentiated so, for example, institutions receive more money for the number of publications and articles published in international than in local journals. Currently the reward for publications in local material is R12, 000 for the first publication, followed by R16, 000 for the second and the third publication would be rewarded with R20, 000. The reward for international publications is R24, 000 for the first publication, followed by R32, 000 for the second and R40, 000 for the third. When there are more than one author, the reward is shared. In particular, the total value of the subsidy given to an institution is determined by comparing the total research output based PU count of the institution with that of a suitably benchmarked norm (Department of Education 2003; Ministry of Education 2003).

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[15] The SAPSE formula is based on a 50:50 weighting between inputs (predicted costs of student training and research) and outputs (student graduations, publications). The values attributed to the various cost units changed each year in accordance with inflation and changing cost patterns.

The focus on measures and formuli make the initiative extremely relevant to academic libraries. Research at UKZN is rewarded according to the PU's as stated in the DHET policy and procedures for measuring research output.   Furthermore the Research Framework Policy at UKZN confirms the university's commitment to meeting the Department's objective of research output. For example, at UKZN, the PU's for a book is 100, 80 PU's for patents and 60 PU's for journal articles (Division of Human Resources & Equity, 2013, Annexure, p. 1).   There are four thrust areas of performance at the university teaching, research, community service and university service and this reward strategy adopted at UKZN is based on performance.   Academics are measured by SAPSE accredited journal publications and student pass rate successes (Cebhekulu and Mantzaris, 2006).   These tangible quantifiable outputs are evidence of their performance.

The Annual Report *(University of KwaZulu-Natal, Research Office, 2014*, p. 2) states the following on the academic achievements for the period under study, 2014 : "The overall institutional research productivity and journal articles output increased by 15%. The number of publishing staff as well as the output per staff improved substantially from 2010. "The total number of research Productivity Units (PUs) increased by 9,6% from 116 475 in 2013 to 127 664 in 2014. Perhaps more impressive is that the number of PUs attained by UKZN researchers has increased by 55,5% over the five-year period from 2010 to 2014" (*University of KwaZulu-Natal, Research Office, 2014, p 2)*. The proportion of publishing staff increased to 89% from 81% and the per capita output increased from 60 to 73 productivity units. In 2004 about 35% of the Lecturers had PhDs compared to 55% for the period 2014. The proportion of Research/Instruction staff with PhDs increased from 41% in 2011 to 85% in 2014. These increased figures have placed pressure on the libraries to deliver the necessary resources to support this research productivity. Libraries have to be in tune with what the research focus areas are and provide the necessary support and respond with better efficiency and effectiveness to the stresses brought about by the research processes.

The increased level of productivity and participation is also clearly reflected in the profile of the Prolific Researchers for 2014. The listed number of researchers increased from 30 to 34

in the College of Humanities, 11 of whom were from the School of Education. One of the academics in the School of Education was listed as an Emerging Researcher and that researcher is under 40 and produced above the norm and the researcher obtained one or more author units in a Department of Higher Education and Training (DHET) list of peer review journals that are accredited (*University of KwaZulu-Natal, Research Office, 2014*, p. 80-88).

The report (Research Office, 2014, p. 3) goes on to quote the following on the publications of academic staff: "In 2014, UKZN submitted 2,240 publications to DHET and has 1489 Publishing staff".

It is within this environment then that academics at UKZN have to perform. The pressures placed on academics to publish is well documented in the library literature. Budd (1995, p. 547) states that: "Academics are part of this complex research dynamic that includes the academic incentive and reward structure. Due to the availability of huge amounts of research funding, the publishing industry has responded to this 'market' by providing a range of publications to communicate this research". Budd (1995, p. 547) goes on to state that as libraries provide the raw information materials used in the research process, pressure is being placed on them as well as to provide access to the products of faculty research". He also makes the point that "there is an interdependent relationship between the academics (producers of the knowledge) and the library (that houses information collections) and academics (consumers of the knowledge)". As Ball (2010, p. 216) notes, what is esteemed in this culture of performativity is not so much the research itself, but the commoditized form of this as a published product that can be measured and which can bring in reward money.

A study by Budd (2006, p. 547) explored this interdependent relationship of academics and libraries by looking at the research productivity of their publications faculty for the years 1991 to 1993 at the 94 Association of Research Libraries (ARL) institutions to investigate if

there were any relationships between the PhD output and the volumes held by the libraries as well as the funds spent on library resources. The study used the three indexes produced by the Institute for Scientific Information (ISI): *Science Citation Index, Social Sciences Citation Index,* and *Arts* & *Humanities Citation Index* to look at the publishing productivity*.* These are the same indices that are used by the DHET to measure research productivity of South African academics, specifically the academics at UKZN. The assumption is that academics will use these indices as a means to develop their publication strategy; they will use it when choosing the journals to which they submit articles. These journal lists inform the publication strategy of academics. The pressure on academics is not just to publish, but to publish in the accredited, peer-reviewed journals.

Budd (2006, p. 549) worked on the premise that there is an 'assumed interdependence' between academic production of research and production of knowledge (by publishing) and the information resources and services of the library. He compared the library variables: volumes held by the library, expenditure on materials, journals and books, and number of professional staff because these were most closely linked to the collections and services that supported research. He also compared the number of doctorates with the publishing data. His findings were that there were some relationships between the library variables and publishing data, but acknowledged that there is a set of complex dynamics at work with faculty publishing productivity. Significantly, he noted that libraries invest huge sums of money on their collections to support research and publishing. The drawback of the study was that it concentrated on the printed journal literature and excluded the book and monographic publication and electronic publications. But the relevance for this study, is that the study by Budd (2006, p. 549) indicated that there is an interdependence between the library collections and services and academic research productivity, in the form of publications.

The advances and developments in ICT have impacted the way teaching, learning, and research is conducted and this will require a renewed consideration of the library and its place in the scheme of things. There needs to be structures in place for acquisition,

description, dissemination and access of electronic content and developing library services that will cater to users that are capable of using the library anywhere and anytime.

The next section will discuss the changing nature of libraries with the new information and communication technologies, changing nature of libraries in terms of their physical use, services, resources and spaces.

2.4 Changing nature of libraries

Libraries are changing and the focus is shifting from what is housed in a library to the interactions between users and their environment. Libraries are being pressured to both supply the information resources and to serve as a communication platform for the products that is journals, books, conferences and publications of academic research. It has to adapt and change the way in which it functions. It is doing so, by investigating new approaches, like new forms of hybrid libraries while some continue to uphold traditional ways of doing activities. The core issues to be discussed in this section is the changing use of the libraries by academics and other users, the library as a physical space and virtual space and the effects that ICT have on it. Finally the use of library spaces by academics or their information-seeking behaviour is discussed.

Traditional measures like library inputs and outputs have little value in determining the strategy for change in this new environment. New technologies are changing the services that libraries provide, for example virtual reference, inter-library loan, self-checkout. Troll (2001, p. 3) states that: "with the information that is freely accessible on the WWW, this is threatening the libraries traditional mission of collecting large self-sufficient collections and making these available". Instead libraries have to purchase access to soft-ware resource because the cost of access is more affordable than ownership and also this new electronic format makes it convenient, to store more information at less cost for use by an increasing number of people. Thus, there has been a dramatic shift in the collections of libraries from

their traditional print collections to a hybrid collection of material that includes material that are print-only, or online-only, or collections in both formats. With the abundance of these collections, library users then can work according to their preferences (print or online) and usage habits. As some resources are available both in print and electronically, library users can select which format is most suitable to their needs.

Lewis (2007, p. 15) stated that the HE environment is very contentious and academic libraries need to articulate their role in this environment by making a purposeful transition and he has proposed a model or strategy that could be used for academic libraries from the year 2005 to 2025. The strategies that he proposes are: firstly to complete the movement from print to electronic collections which will not only bring savings but convenience of access, secondly to retire print collections by moving them to off-site storage facilities as these collections are occupying prime space in most libraries, thirdly to redevelop the library as a relaxed learning space with: "the aim to create comfortable, lively, and active spaces where students can interact with each other and with technology and where support for the use of library resources and technology can be found" (Lewis, 2007, p. 7).

Fourthly to reposition library tools, resources and expertise. He suggests that this can be done by what he termed: 'Scholars Collective' which is not a place, rather it is a set of tools for the discovery, collecting, creating, and sharing of information. It will be web-based and while it will have some traditional library functions like acquisition, collection and preservation built into it, it will not be the library" (Lewis, 2007, p. 11). For libraries to be effective and not overlooked by its users, it has to ensure that its resources, services and expertise are entrenched in the different structures of the university and part of the resources that students and academics use in their daily, routine lives.

The final approach is to move from purchasing collections to migrating content. This is possible because of open access (OA) literature, which is freely available online and is also free of permission rights like copyright and licensing restrictions. OA removes costs of

traditional publications like subscriptions, licensing fees, pay-per-view fees and costs related to permission rights" (Lewis, 2007, p. 11).   OA material can be located on the WWW through search engines like Google or Google Scholar.

Traditionally libraries have purchased material to support their institutions missions but have also focussed on building collections of special interest that are valuable, unique or has a distinctly local nature, for example the Killie Campbell collection at UKZN, which is an Africana library belonging to Dr M. R. "Killie" Campbell which passed into the hands of the University upon her death on 27th September 1965. This collection consisted of some 35,000 items including rare books, manuscripts, paintings, drawing and prints (Buchanan, 2008).

The proposed model of Lewis encapsulates the changing nature of libraries, where each part can operate independently or interdependently:
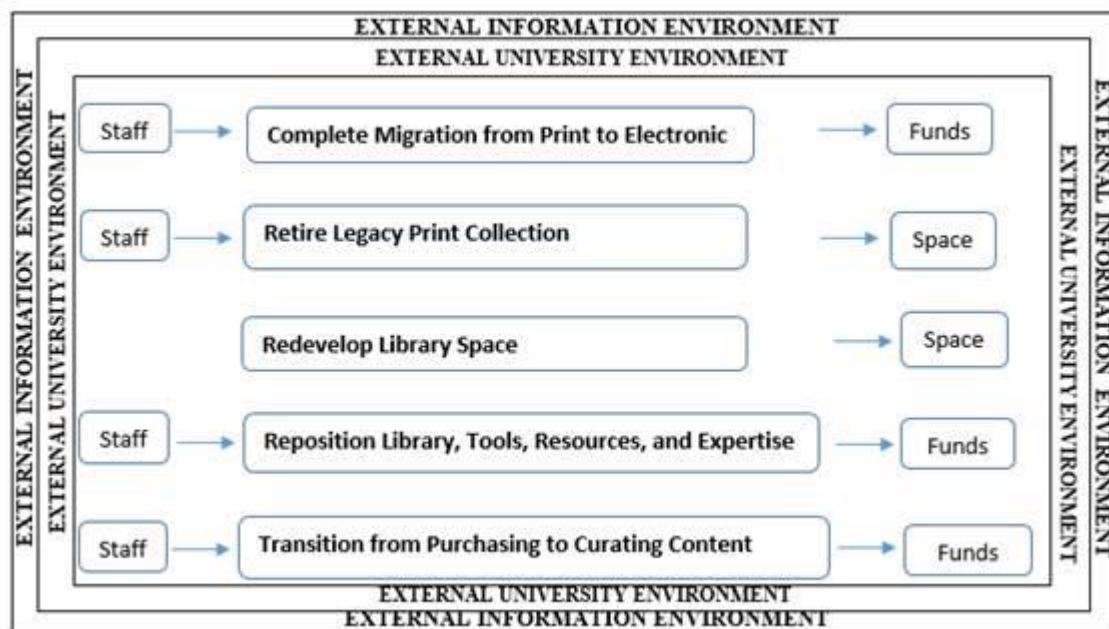
Figure 1.1 A model for the 21st century library (adapted from Lewis, 2007, p.21)

Lewis's model reflects the changing nature of libraries whereby the first, second, and fifth parts of the model represent a change in collections – either by replacing, moving or

migrating. The third part of the model represents the change in library space, which is dominating library literature – the use, design and architecture. This space exists in the personal and professional contexts of the user. The fourth part of the model focuses on the human resources, changing the way librarians use their expertise. All parts of the model are done within the confines of the library environment but the library environment is now being located within the university campus and the external information environment and the boundaries are being blurred. The library is located within the social and institutional spaces. The library is no longer a confined or separate place. Lewis's model for the 21st century will require financial investment from the institution for the redevelopment of library infrastructure as well as the repositioning of library tools, resources and expert staff. This vision may resonate positively with many academic libraries including UKZN libraries because a large part of the library's material budget is expended on electronic resources and there is a demand by students for a variety of learning spaces and print collections are being reduced and this is illustrated by the substantial growth of ResearchSpace, the university's institutional repository in the last few years (UKZN Library, 2012b).

The model illustrates that the physical space of the library is still very important with the print collections, storage and usage of that and the use of the space for a number of purposes. The next section will review the literature on the library as a physical space.

2.4.1 Library as a physical space

There is an increasing body of literature devoted to writings on 'library as place' and many authors have written on the demise of the libraries due to the developments in ICT's and so on as well as what would be the future of libraries. There has been a rethink of library spaces and their identities and the use of this space as 'expensive storehouses'. At the advent of ICT development, many publications were devoted to the demise of print and that there was going to be a paperless society (Thomas, 2000, p. 408). Many publications have been devoted to the concept of 'library as place', buildings that have the elements of the

traditional physical library, but are in fact more vibrant with ample learning and collaborative spaces and the literature focuses on the architecture, either on renovations or constructions and specifically on redesigning of library spaces (Applegate, 2009; Bawden & Beard, 2012; Bennet, 2005; Eigenbrodt, 2008; Freeman, 2005; Engel, 2004; Niegaard, 2011; Latimer, 2011; Ranseen, 2003; Waxman, 2007). Many works illustrate the changing nature of use in the library space and the thinking around that in the past twenty years with the primary catalyst being the advent of electronic technology and resources. However most of these studies on library as a place have focused on student use of library spaces which is less relevant to the particular focus of this study. However these studies did draw attention to the need to consider how library spaces are changing.

According to Thomas (2000, p. 408) who reiterates that: "the paperless library does not exist" most journals and books and monographs are still published in print even after many years of electronic publishing. She cites many reasons for this like: firstly the expensive cost of digitization and for journal titles in specialized fields, a print subscription is a requirement for most publishers. Secondly, the legal rights and responsibilities of copyright and intellectual property on the dissemination and access to information resources is still an issue. Thirdly the important issues of technology because no academic library can provide computers for all its users to use the electronic resources, the usage is dependent on the user having access to the infrastructure and technology personally. She suggests that academic libraries will be spaces where the print and digital will co-exist for many years to come and that will be the test for the 21st century. Her solution to this debate is to note that

> [… the] best way to plan library space at the beginning of the
> 21st century is to consider the virtual library when
> renovating Good design will take this into consideration.
> Both the physical library and the virtual library will co-exist
> and operate on two levels and are part and parcel of service.
> Both have their own special spaces and are developed
> simultaneously (Augusta, 2000, p. 415).

The study done by Cocciolo (2010, p. 523) investigated whether the virtual space could be used to ease the challenges presented by physical space for group collaboration at the Teachers College Library of Columbia University in the US. Specifically, this study investigated whether library users will substitute the online virtual space provided by the library's gateway to resources, when there is a shortage of physical space. Findings from the investigation revealed that the physical space was heavily used, in particular the group study space or collaborative spaces whereas the virtual space, in the form of Moodle meeting place, the learning management system was not used. The study also noted that users will work around the constraints of the physical space rather than turn to the virtual space. This study looked at usage of the space by students and academics and whilst the relevance of this study may be restricted to that specific institution, it may be indicative of the user community of UKZN because Moodle is the preferred online open source learning platform in use. The study concluded that: "existing spaces may be renovated and reconfigured, and the actual functions of the library may change or evolve over time, yet as this study illustrates the need for physical gathering places is resilient" (Cocciolo, 2010, p. 533).

In keeping with the resilience of the physical library space, Shill and Tonner (2004) conducted a web survey of academic library re-design and revamp between 1995 and 2002 in 182 US academic libraries data on four usage variables — traditional measures of usage such as the exit gate count, circulation statistics of the various collections such as in-house collections and the reference collection.   This study was prompted by the large number of academic libraries in the US that were undertaking expensive renovations and new constructions of their physical libraries at the time. A significant finding of this study was that these renovations gave the libraries a 'fresh start' but did not significantly affect the usage unless the renovations had considered the way the space was being used and made appropriate changes. The study also concentrated on non-library facilities like conference rooms, multimedia facilities, and computer laboratories that is a new feature in libraries. The study concluded that: "a high-quality building does make a difference, and students continue to use an improved facility and that ultimately, decisions on the future of academic

library space will reflect changes in technology, institutional priorities, teaching strategies, and librarians' own assessments of the significance of the physical library" (Shill & Tonner, 2004, p. 149). This study investigated the usage of library space by users and what is their motivation and objective. A drawback to the study is that it lacked the contextual information to understand why circulation and gate counts were declining or increasing and what this means for teaching and research. This contextual information may be very helpful for libraries in South Africa that are undertaking renovations and refurbishment as to why students in the US did not use their library services.

The concept of library as place looks at the physicality of libraries and what usage is being made in these physical spaces, by who and when (Templeton, 2008). These studies when looking at the physicality, concentrate on students usage and not how academics and other stakeholders use the space. The study by Antell and Engel (2004) examined the use of faculty space (private and professional) within the library, which is usually a contained space that is private and has a desk, a chair, a bookshelf, and the necessary computer connections that are required to access the Internet and resources. They interviewed ten academics at the University of Oklahoma's Bizzell Library during the period 2002 to 2003. Their study employed 2 research methods: interviews of academic users and a survey of staff from the Association of Research Libraries (ARL) member libraries. The interviews produced qualitative data about individual academics' usage of this space. The ARL survey produced quantitative data regarding the features of the academic spaces including elements such as usage rate, demand, furnishings, services and policies for the usage of this space. The survey also produced data on the profile of the academic user such as their gender, departmental affiliation. Their findings were that: "academics considered these spaces as an 'oasis of solitude', a place for where they could work uninterrupted and engage in thinking or reading, and a quiet place for reflection, which allowed them to 'serendipitously browse' the library collection. Their 'academic upbringing' had familiarised them with the library so that they used it as their primary place for doing research" (Antell & Engel, 2004, p. 12).

This study then led them to conduct another study in June 2004 at the University of Oklahoma on how academics used the library resources physically and virtually or remotely based on their age group (Antell & Engel, 2006). The research method employed was an online survey of academics and doctoral students. The findings were that academics of all ages used the library for scholarly research but the physical space was more popular amongst younger academics than older academics. Academics favoured the convenience, readability and 'browsability' of the electronic resources and the 'browsability' of the physical resources. The university's collection was found to be more comprehensive in terms of coverage and currency than their electronic collections. Their findings were that older academics valued the collections that were in print in the physical library whereas the younger academics valued the collections and resources that were electronic. In addition, older academics use of the library is relatively restricted even though they valued the print resources more. Their results also indicated that younger academics viewed the library space as contemplative. The study concluded that the trend in academic libraries to improve the design and aesthetics of their space is on target because this is what is most valued by students and academics.

The majority of the studies reviewed have been conducted in countries (libraries) in the North whereas countries in the South, especially in South Africa not much has been written on library as a space and place and how academics engage with that space.

The next section will discuss the library as a virtual space and what impact technology has had on this space in terms of its usage and design.

2.4.2 Library as a virtual space: the effect of information and communication technology on library spaces

As collections in academic libraries have gone electronic and as users have modified their library use accordingly, there has been considerable space released for new and innovative

functions that are often associated with access to those very same digital technologies. Bennett (2006, p. 5) wrote that:

> "When beginning to conceptualise and plan a library for the future : if academics, scholars, and students can now access information in any format, anywhere and anytime, then why does the library, as a physical place, play such an important role in the renewal and advancement of an institution's intellectual life?"

The library plays a significant role in the institution's intellectual life because it is in a central position where modern and advanced ICT's exists together with traditional information and library resources. Furthermore library services are geared towards users in an environment that considers their social needs as well as the changing learning, teaching, and research. The library is the place where users meet and socialise whereas the usage of ICT's isolates them. The issue of theorising space is important because it attempts to understand the social practices of humans, and how they interact in the space and what institutional forces are at play. As a result of these developments, libraries have once again become learning resources within the institution and can become the foundation for launching the intellectual and academic initiatives.

Weise (2004, p. 11) on her discussion of the University of Maryland's new medical library stated that in looking at library as place, these were their considerations: "the WWW and the Internet has not taken away the need for the physical spaces of the library. Instead the library spaces have to be designed so that the virtual space and physical space are merged and can be used simultaneously; to create a ''convergent architecture.'' The virtual library also enables access to resources with mobile and electronic devices in spaces that has appropriate seating and furniture and multi-purpose areas and non-library facilities such as cafes, whilst the physical space will offer group study rooms or collaborative spaces with access to elements of the virtual space like electronic access to resources. The National Library of Medicine has proposed a "new building, a ''collaboratory,'' a space where

international and local scientists, research staff, and librarians can work together in a space where face-to-face collaboration can be combined with people-to-computer interactions" (Weise, 2004, p. 11). This issue of collaborative spaces will be discussed later.

Ludwig and Starr (2005, p. 317) conducted a 'delphi study' on "Library as Place" whereby they asked open-ended questions to a group of 14 experts, made up of librarians, architects, and space designers who have been involved in the design and development of health sciences libraries, with emphasis on the changing nature of library services and their new roles. Respondents were also asked to reflect on how ICT would change or influence the design of library spaces in the future. Notable results were that academics were changing the ways in which they communicated their research, with the growth of electronic journals and that: "by 2015, the electronic journal article will be the chief unit of scholarly communication" (Ludwig & Starr, 2005, p. 317). This prediction was quite accurate because that is the reality in academic libraries at present.

As a result of this, most print material will be sent to off-site storage facilities and most journal subscriptions will be part of electronic packages and not subject-specific. The library space will be reconfigured to: "house and manage instructional spaces for activities such as distance-learning classrooms, media laboratories, presentation facilities including auditoriums, and configurable teaching spaces. A prediction for the future of libraries is that they will: "be responsible for providing online access to a variety of formats of digital materials, as well as for preserving and archiving these materials for their institutions in repositories with the assistance of their information technology (IT) departments" (Ludwig & Starr, 2005, p. 321). These experts also predicted that with the developments in ICT especially with authentication technologies, and increased bandwidth for wireless, their use would be prevalent on campuses, and in libraries. But for those wanting to use the physical space, there will still exist equipment for walk-in users, but the majority of users will carry mobile personal devices and libraries may need to provide a small number of desktop

machines. Furthermore it will be necessary for library spaces to be reconfigured to accommodate lounge seating for the use of these devices.

Another area in which the library could meet user needs is by providing these devices on hire or loan or users could have their own. "Substantial space will be provided as well for users to interact with technologies such as three-dimensional modelling, advanced visual displays, and immersive environments" (Ludwig & Starr, 2005, p. 321). Furthermore, their predictions were accurate in that the influence of these technological modifications on library design have been wireless devices and computers or multi-server computers that require less cables and cords and networked printers. Instead the space is devoted to areas where these devices can be used, more space for teaching and more space for training, especially with the introduction of VLE's. Finally, the space designated for library support to assist users may have to be relocated to a central position so that the expertise and support is available to a gradually technologically dependent clientele. Their study concluded that libraries spaces will continue to exist, but the nature of their usage will change with a requirement for quiet working spaces, collaborative work spaces and learning centres for electronic material.

In academic libraries, their major clientele are academics and the next section will discuss how the library spaces are being used by academics. As technologies are transforming the environment for teaching, learning, and research, academics' information needs are also evolving. To serve these needs, it is a prerequisite that universities understand how this need is changing and how this is expected to change in the coming years. Whilst Ludwig and Starr present us with an exciting vision of a future library space this concept needs to be interrogated for possible application in the current South African cultural context.

2.4.3 Use of library spaces by academics

Abundant literature exists Rupp-Sarrano & Robbins, (2013) looked at the information-seeking behaviour of education academics; Schonfeld & Housewright, (2010); Schonfeld, Schonfeld & Housewright, (2013) – carried out large scale Ithaka studies of academics attitudes to technology. Users want additional and enhanced content, more and enhanced access, convenience, innovative capabilities and the ability for academic libraries to satisfy and advance these requirements will define their success. The majority of the research is based on quantitative methods (Rupp-Serrano & Robbins, 2013), but some examples used an ethnographic approach, (Bryant, Matthews & Walton, 2009; Given & Leckie, 2003) and there were also observational studies. Most of the studies on information- seeking behaviour have used quantitative methods such as surveys, and qualitative methods such as individual and focus group interviews.

Libraries will provide multi-purpose areas, collaborative spaces for group discussions; quiet spaces for individual study and classroom-type spaces for training of library and information and related resources (Freeman, 2005; Bryant et al., 2009). This new generation of users will expect that these newly created space are comfortable, well-lit and conducive to thinking, discussing and working. The space should also enable them to work for long periods of time in them with the necessary equipment to prevent screen-glare with devices such as printers, scanners and high-definition screens. Support systems such as IT and technical support should also be available to assist when necessary. Browsing will form part of a crucial function in the use of the physical libraries, and a result of that some users will still see the symbolic significance of libraries as a space. The storage function of libraries will continue to be important and more will be invested in repositories, especially of older, archival material and the trend will be to store this older material off-site or off-campus and mechanisms will be put in place to retrieve them when required (Brown, 2007; Cocciolo, 2010; CURL & RIN, 2007).

RIN and the Research Libraries UK (RLUK) (2011, p. 5) conducted a study in 2010 of 67 UK HE institutions which was done regularly. It looked at the value of the services that academic libraries in the UK deliver to researchers, and how this contributes to the research performance of the institution. The study was a quantitative analysis of statistics by the Society of Colleges, National and University Libraries (SCONUL) and Higher Education Statistics Agency (HESA).

Their key findings were:

> "that good libraries help institutions to recruit and retain top researchers; help researchers win grants and contracts. Libraries promote ICTs and new models of scholarly communications and makes a contribution to institution-wide initiatives; Provides dedicated spaces for researchers and convenient access to high-quality research. The repositories created by Libraries increase the visibility of the institution and raise its research profile; Specialist staff work in partnership with academic departments. (Consortium of University Research Libraries, (CURL) & Research Information Network, (RIN) 2007, p. 9)".

2.4.3.1 Information-seeking behavior

Wisneski (2005) conducted a study of the use of the library and the research behaviour of academics in the discipline of English at the Kent State University in the US. The finding of the study was that academics were disposed to make use of their institution's library for their own research. The findings revealed that their main challenge is lack of time to do research and to learn completely and comprehensively about the number of library resources available to them. The academics did not display any evidence of their diminishing research or availability of resources and there were not many differences in their use of library resources and their research needs.

Their findings revealed that although teaching, learning, and research had changed, academics were not responding to the demands of students from different social and educational backgrounds. Library space was being used differently by these students and academics were not paying heed to that (Jamieson *et al.* 2000; Jamieson 2003). Due recognition was not being given to libraries and librarians even though they were providing access to information researchers to individual researchers (*Research Information Network*, 2011). Research done by CIBER in the UK on the use of e-journals and their importance to HEIs found confirmation of the value of libraries, and linked the high levels of per capita expenditure to research performance and the use of e-journals *(Research Information Network,* 2011, p. 3). Conversely the *Library Impact Data Project*, funded by the JISC in the UK found that there is insufficient confirmation that there is substantial value of libraries in teaching. It looked at the connection between library use by students and achievement.

Another large-scale study entitled "*Researchers use of other libraries and information sources*" was done in 2001 by the HEFCE and commissioned by the *Research Support Libraries Group* (RSLG). The method used was a survey of 3,390 researchers selected from the 2001 Research Assessment Exercise [16](RAE) Census. The intention of research was to provide a comprehensive current update of the information sources researchers need, use, their patterns of usage and their method of using these resources and if there were any differences in use according to the disciplines. Researchers had to indicate what information resources they thought were required for their research and what resources they could not do without. There were many similarities and differences between the subject disciplines. The key findings were: "the hybrid library is important to most researchers in all discipline. They regard both print and electronic material as essential information resources currently and for the future as well; the convenience and accessibility of information from online sources is increasing for researchers in all disciplines; finding tools for selecting and locating research information is important and these should be available in electronic form; Print

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[16] The Research Assessment Exercise (RAE) census is done approximately every 5 years on behalf of the four UK higher education funding councils (HEFCE, Scottish Higher Education Funding Council, Higher Education Funding Council for Wales, Department for Employment and Learning) to evaluate the quality of research done by British HEIs (RSLG, 2003).

material should be provided by their home libraries as well as external providers (meaning interlibrary loans); their own academic library is essential to their research, and the national library - the British Library is an important source for material not in their home library" (HEFCE, 2002, p. 10).

The study by Zhang (1999, p. 28) indicated that academic use of the web tended to be focused and very little surfing was undertaken. Academics turned to the web when they had a specific information need. An overriding theme in the literature was faculty identification of two major impediments to use of the WWW: lack of information about what is available electronically, and secondly lack of instruction or training in how to use these resources. The study by Ovadia (2009, p. 336) of the La Guardia Community College in the US also showed that faculty staff did not make greater use of the library electronic resources because they were simply not aware of them. Many academics indicated that they use unsubscribed or freely available online resources for their own research. They are able to conduct their research without going through the library and are using Google Scholar to access the majority of the material required. Google Scholar is a freely available web search tool that enables users to search for scholarly literature, some of it peer-reviewed. Furthermore academics expressed satisfaction with their method of access electronic resources without going through the library. Haglund and Olsson's (2008) ethnographic study of 50 academics at Karolinska Institutet, Stockholm University, Sweden concurred with other studies on academics use of virtual library spaces, that academics had very little knowledge that libraries could also provide IT expertise on non-library resources. The findings of their study were that academics needed support with non-library resources like software (Microsoft Word, Excel), referencing and bibliographic software like EndNote, as well as tools to manage files such as Adobe Acrobat (pdf). This lack of knowledge of library skills and expertise indicated that the working relationship between academics and the library was lacking, and that academics had believed that the library service is essential and taken it for granted. The provision of information was the responsibility of libraries and it was a tasks that was taken for granted by academics and not something they thought about. Google was a starting point for most of their research and most academics were unaware of Google Scholar.

The assessment study by Hoagland and Clougherty (2002, p. 2) of the use made by faculty and staff at the University of Iowa Libraries pinpointed the areas, services and resources that faculty and staff want from the university libraries. Contrary to most current studies, the results revealed that faculty and staff would like the Libraries to participate more in the procurement of print books and journals, in addition to e-journals and to expand remote access. Even though faculty and staff are self-sufficient users, they depended on and preferred personal contact and individual assistance. This study also revealed that faculty and staff under-utilised countless Library resources and services merely because they were not aware of their presence (Hoagland, 2002, p. 4).

2.4.3.2 Use of digital technology

Library literature offers an abundance of works on how technology has impacted libraries and how these libraries are being used and influencing usage. Various studies have been undertaken in the last thirty years and discuss how academics use the virtual library and environment. Kachaluba, Brady & Critten, (2012) conducted a qualitative and quantitative study of the benefits and shortcomings of print and digital and electronic resources; Schonfeld & Housewright, 2010 and Schonfeld & Housewright, 2013 in their large scale Ithaka study looked at academics attitude to digital technology. The significance of electronic resources and academics teaching and research were discussed and the findings of these studies confirmed that academics are very familiar with the technology and computer infrastructure and are able to use ICTs and information resources in their academic tasks of research and teaching and have moved easily from the print to electronic environment (Engel & Antell, 2004: Jankowska, 2004).

Ithaka, a consulting and research non-profit body in the US conducted a series of surveys of academics at institutions in the US. Surveys have been conducted every 3 years since 2000,

firstly in 2000, 2003, 2006 and 2009 (Guthrie & Housewright, 2008; Housewright & Schonfeld, 2008; Schonfeld & Guthrie, 2007; Schonfeld & Housewright, 2013). These surveys have attempted to understand academics attitude to ICT over the last few years and how this has changed or progressed. This survey illustrated that technology has changed how academics approach research and almost 40 per cent of them begin their search with Google and Google Scholar. Guthrie (2011, p. 88) attributes this to the amount of freely accessible scholarly material is available online. As the content migrated from print to electronic, academics expect changes in certain library activities in response to teaching and research and that some activities would no longer be required. When asked where academics would go if they could not find the source, 90 per cent responded they would use the Internet and 80 per cent responded that they would request an interlibrary loan (ILL). This study also revealed that this access to technology does not come at the expense of the libraries. Libraries are still viewed as the gateway to research. The hypothesis is that a reason for this is that libraries are making huge investments in discovery services and tools. Academics were still divided on whether they would prefer a totally electronic-only journal collection, or physical copies of journal collections. These divisions could be seen in the disciplines, with humanities preferring print. Peer-reviewed journals, academic conferences and scholarly monographs are still the most popular methods of disseminating research.

Another large scale was undertaken by the Consortium of University Research Libraries (CURL), and the Research Information Network (RIN) in the UK and published their work *'Researchers' use of academic libraries and their services'* in 2007. Quantitative and qualitative methods were used to collect data from researchers and librarians to on how library services have increased and how researchers are using these services. The methodology for the study was two-fold: a survey of 2250 researchers and of 300 librarians, and interviews with focus groups and discussions. The majority of the researchers had embraced the availability of digital content from their desktops, primarily from their offices but also from home, creating a significant decrease in library visits in the last five years. Digital finding aids were used to find electronic and print information. The study concluded that researchers and librarians were looking at their roles differently in supporting research. Libraries would remain guardians and managers of virtual resources and librarians viewed

themselves as providing expert advice on these resources. These findings were similar to the large-scale study done by Ithaka above.

While many studies have focused on the use of libraries by academics or faculty, not many investigate the usage of library spaces by academics or what their understanding are of library spaces. The library literature has also focused on how library services, facilities and space have evolved as a result of changes in ICT, pedagogy and changes in HE. The literature over the generations have focussed on ownership of information resources in print and later access to electronic resources and the gateway function of libraries. Things have since changed, as libraries are responding to the changes in ICT and the changing way in which user learn, teach and research. Library collections have undergone intense growth because of the availability of a number of databases, database packages and electronic resources (Demas, 2005).

A number of studies of academics (Bryant, Matthews & Walton, 2009: Hart, 1997: Jankowska, 2004: Klentzin, 2012) look at their teaching and learning but not at their research practices in this digital age and the impact of the technology on their research. A second theme contained within studies on the relevance of the academic library is the interest in planning processes to guide changes in services and facilities. In Libraries Designed for Learning, Bennett (2003) considers the ways in which library space planning can grow out of past models into appropriate responses to current and future students' needs. Bennett wishes to replace the traditional planning for excellent library services with student-centred planning for library spaces that serve to facilitate learning.

A range of distinguishing trends—including decreasing circulation statistics, like gate counts (Oppermann, 2007), the growth of the WWW and search engines (Schonfeld & Housewright, 2012), the amount of freely available, non-subscription and open access material on the Internet, changing pedagogy and learning practises — have questioned the sustainability and

future of traditional libraries and the whether the functions of information provision, organisation, preservation and storage role of libraries is still required. Questions are also being asked of the physical library services that are offered and whether there is still value in the physical library. Librarians are questioning their expertise, skills and knowledge in teaching and training library users to find information and whether the next generation of users will have the necessary skills to find information and pursue it until they locate quality information. Just as there has been a dialogue on 'library as place', there is also a dialogue on the 'library of the future' (Engel, 2004).

While academics are impacted by this information overload, there is a trend in the declining reference and circulation statistics of the physical collection and a growing reliance on the electronic collection. The findings from the Jankowska's (2004, p. 55) study revealed that: "86% of academics used ICT's to communicate with students and colleagues, 78% for publications like proposals for funding and research, papers for conferences papers and 76% for preparing study and teaching materials. With regard to research, 67% of academics used ICT's for retrieval of library e-resources and publications and 58% used ICTs for retrieval of information from the WWW and Internet. The majority (86%) of academics stated that ICT had assisted them in their research and teaching activities and 85% stated that their research productivity had increased as a result of the quick and seamless way in which they could communicate with their students and colleagues. As a result this enabled them to easily access information in this format which boosted their confidence when looking for information and reviewing literature and it allowed them to find information that they would not have ordinarily found, and in this way allowing them to grow professionally and in their fields".

In addition, 65 per cent of the academics were satisfied with the library services and the offerings of e-resources. They felt that it had enabled them to increase their efficiency, saving them valuable time with their information-searching skills, assisting in the research process and providing the necessary guidance and assistance to their students. Thirty-five

per cent of them cited unhappiness with e-resources and library services as they were unaware of these information resources; an apparent lack of suitable resources for their research; lack of training and instructions on accessing materials and services remotely; poor design of the library website and therefore not enabling the use of the services; and frustratingly access restrictions to the resources and network connection problems.

Academics message throughout the survey in the same study was: "keep up the current good services but improve and expand access to e-collections and e-services". (Jankowska, 2004, p. 63) ICT's was the preferred method for academics to enhance their academic activities of research, teaching, and professional development. It was also their preferred method of communication with colleagues and students. The results of this survey confirmed that a major obstacle for academics to make efficient and effective use of e-resources and services is the lack of awareness and knowledge of e-resources and the training and instruction in these e-resources.

The revolution in ICT's changed the information-seeking behaviour of users (Kuruppu, 1999; Abels, Liebscher & Denman, 1996). This was enabled by ICT facilities such as electronic mail, group discussions and chit-chat groups as well as video-conferencing and electronic conferencing that allowed different mediums of communication for users with specialised and distinctive information needs of users (Krishnamurthi, 1998; Korobili, Tilikidou, & Delistavrou, 2005, Zhang, 1998; Leckie, & Hopkins, 2002; Lederman & Jaschick, 2013).

Ge (2010) conducted research at the Tennessee State University (TSU) in Nashville, US in 2004 of 30 academics and doctoral students. It investigated their awareness and use of resources, both e-resources and print resources for research. It used the Ellis model as a framework, and looked at how this model might relate to their use of print and e=-resources. The David Ellis Model had 6 important features of information seeking: starting, chaining, browsing, differentiating, monitoring, and extracting. The study's findings were that electronic resources were important for social scientist when searching for information.

Academics had to rank the ICT's and the WWW was ranked first, followed by databases at second place, and e-journals ranked third. This was closely followed by the library's OPAC and then e-mail. The study had similar findings to that of Antel and Engel (2004) about the age of users especially academics whereby the junior academics (assistant professors) and doctoral students used more electronic information resources than their more senior professors. Electronic resources was still the popular choice for all of the participants surveyed and they indicated that they would use e-resources for information and their research. The crucial issue for the electronic resources were that they were easy to access anytime and anywhere which was imperative to these researchers (Ge, 2010). The author of the study acknowledged that:

> "Changes would have taken place in the field of ICT since this
> research was conducted in 2004. New technologies referred to
> as Web 2.0 such as Facebook, Flickr, Blogs, YouTube, and
> Twitter have emerged and these will have repercussions for
> library use.   These social networking technologies make it
> possible for academic libraries, to connect and communicate
> in a different way with their staff and other library users" (Ge,
> 2010, p. 451).

Web 3.0 and Web 4.0 have also made an appearance recently in the last 20 years (Choudhury, 2014, p. 8097). "Web 3.0 represents data and analysis filtered through artificial intelligence, while Web 4.0 technology will become one with users' lives" (Noh, 2015, p.786). Web 3.0 technologies can be characterised as cloud computing, Open Source development, online education and virtual realities. Noh (2015, p. 789) wrote that:

> "Web 1.0 is about information connection, while Web 2.0 is
> characterized by the creation, storage, evaluation, and sharing
> of information through users' active participation. Web 3.0,
> the semantic web, is a web where data and knowledge are
> connected based on intrinsic meanings rather than just links of
> information, and Web 4.0 will represent an upgraded, higher

level intelligence on the part of technology, and a ubiquitous

web based on a web operation system under which everything

is connected, such as an "Internet of Things".

Adams and Bonk (1995, p. 121), undertook a 4-campus survey of academics of the State University of New York Libraries in the US on their use of ICTs and information resources. The findings were similar to other studies on academics that the most common obstacle to using e-resources by academics was the lack of knowledge and awareness of resources and that academics were favouring conducting their library transactions via e-mail or through the a university electronic system and at the State University of New York they used the campus wide information system (CWIS). Weingart and Anderson (2000, p. 130) concurred with this study that academics are unaware of library resources and there is a need for improved publicity regarding new acquisitions, training opportunities, and methods of off-campus or remote access. The study was conducted of the academics at Utah State University Libraries and the main finding from that survey was that the university libraries needed to step up their efforts to publicise and advertise the available electronic resources, to provide guidance and instruction on how to access them, and to provide information on the content and offerings of each database. Korobili, Tilikidou, & Delistavrou, (2005) conducted their study of academics at the Technological Education Institute in Thessaloniki, Greece and on how they used resources, particularly electronic resources by academics. The findings were that books, websites, printed journals were the most popular followed by e-mail. Time was a major barrier in using electronic resources, but that the library should increase its marketing and communication efforts to increase academics' awareness of resources.

The lack of awareness and knowledge of resources, their content, availability and accessibility was the recurrent theme in these studies on the library as a virtual space. Most users of these resources also revealed that time was an issue for them when seeking information and that they did not pursue the search any further as a result. Disappointingly another reason cited by users on the electronic resources was the lack of training and

assistance from librarians and libraries which was a serious obstacle in the effective use of them. These studies seem to indicate that when academics do eventually obtain the research information, it is not about the library service or facilities but rather the lack of library marketing and publicity and actively advertising these resources.

A review of the literature on how academics find information and their research practices show that the majority of the studies have been done in developed countries in the North and reveals their behaviour which may be different from users of libraries in the South. No comparative study has been done in Africa or South Africa. However, conditions in South Africa when compared to conditions in countries to the North may be different and some of the findings and results may not apply to the situation in developing and particularly under-developed countries. The review has highlighted the key challenges and have identified some of the pressures that libraries face which have transformed the contexts for academics use of research. The published literature shows that there has been a decisive shift in the issues from the potential of information technologies to a critical, considered awareness of the complexities of the current research environment (Council of Higher Education, 2009).

Although a few isolated studies (Darries, 2004; Jager, 2005; Moyane, 2007) have been undertaken locally, not much has been written on the research behaviour and practices as well as the information seeking behaviour of academics in HEIs in South Africa. Minimal research attention has been directed towards this gap in the knowledge and use of libraries. Local studies done by Raju & Schoombee (2014) on the research support provided by a transformation of the library service at a university in South Africa and Karin de Jager (2005) and Fatima Darries's (2004) study of faculty and staff use of academic libraries have focused on database usage and circulation studies but not on how academics engaged with the library for research as well as for teaching needs. Two local studies were done on library use or research engagement by academics in HEIs. A Master of Information Studies thesis done by Pretty Moyane (2007, p. 1) focused on the research capacity needs of academics in the humanities at the University of Zululand. Her overall findings were that research support

provided for academics was inadequate and that correlated with the low research productivity in the humanities at the University of Zululand. The second study was done by Dumisani Nkosi (2009, p. iii) which investigated the knowledge and use of library resources by academics and their expectations of undergraduate students with respect to library use at the Pietermaritzburg campus, UKZN. The objectives of the study were to determine if academics encouraged library use by undergraduate students; if so, why and which resources were they being directed to; and to determine the knowledge of the academics about library resources and capabilities. His overall findings were that majority of academics used the libraries for their own research needs and to a smaller extent for lecture preparation (Nkosi, 2009).

2.5 Summary of the chapter

In retrospect, the library as a place and space has transformed significantly over the years. In the early years not much consideration was given to academic libraries as a place except to perform the traditional functions of a library such as acquire, process, preserve and store material. This concept of the library changed when the universities were changing as a result of the scientific revolution, when knowledge production, dissemination and innovation became the purpose of the modern university. The advances and developments with ICTs is of vital importance to libraries, and just as librarians cannot foresee what developments may take place in the future, they have been remarkably adept and resilient over the years with the changing library technology and have endeavoured to foster relationships between their users and the technology (Weise, 2004, p. 11).

The current cohort of literature suggests that writers are writing about the design, architecture and aesthetics of library spaces and focus specifically on the physical aspects of libraries. The literature on the physical library space covers the following issues: design, aesthetics, reconfiguration of learning and collaborative spaces. The literature on the virtual spaces covered the increased usage of electronic resources but that most academics

were unaware of the resources due to the lack of communication and marketing by libraries. But that academics are very aware of the electronic resources and most choose to use Google as a starting point to their searches. As discussed, these developments and changes have great significance for information resources, library services and facilities. Libraries were and are the physical core of university campuses with large and substantial collections and impressive architectural buildings, but with the introduction of electronic resources, their collections are more widely dispersed and the library users can be using the resources, services and facilities from anywhere and anytime. The challenge for the contemporary library is two-fold: to repurpose the design of library buildings so that it meets the needs and requirements of their changing user population and to repurpose and develop the library's electronic presence so that it meets the needs of those users and becomes a space that is significant to users and has value. As the technology changes, user behaviour changes and ways of teaching research and learning evolve, the concept of *library as space and place* will be an important aspect in the physical and electronic environments.

The landscape of higher education is changing and universities are becoming increasingly commercialised with targets for academic research productivity. The spin-off of this is that the library becomes the core. The only way to generate funds is to do research, there is a move away from teaching. There is a push for academics to publish or they may 'perish' within the university and their disciplines. This push is related to the university ranking, their individual performance and productivity and the emphasis is placed on resources used by academics to conduct their research and this has a spin-off effect for the libraries. Academic libraries have to respond to this pressure and challenge. Libraries are more than storehouses, they are the service centre for the institution, providing support to meet the institutions goal of research, teaching and learning.

The literature review has revealed gaps on how academics use the library space, both physical and virtual and how they make their choices between the two platforms. This study will add to the body of knowledge on library spaces. As a result of improved accessibility to information, improvements and developments in ICT, studies that have been conducted

previously have to be carefully interrogated so that they are legitimate. The studies reviewed have been largely conducted in the countries of the North and more developed countries as they dominate the literature, and there is a lack of similar studies in countries of the South and developing countries. Although this may be the situation, the redesign of libraries in South Africa has been happening in the last 10 years as has happened in libraries in the North in the last 20 years. A major reason for this is that although South Africa is a developing country it is also controlled and affected by the same challenges and changing needs of users and HEIs as in the North. (University of Cape Town, 2006).

The next chapter details the theoretical frameworks that underpins this study.

Chapter Three: Theorising the Study on Space

3.1 Introduction

This chapter's main purpose is to lay out the theoretical foundation for the succeeding analysis and to develop a language for talking about space, in order to understand how place is experienced, interpreted, constructed, resisted and lived. The secondary purpose of this chapter is to apply some of these insights to the particular space of the library. Research cannot be conducted in a vacuum and the theoretical framework is concerned with the way in which the research is framed (Henning, van Rensberg, & Smit, 2010). The theoretical framework will provide guidance with regard to the structure of theories or concepts for the research. The chapter, therefore, presents a theoretical framework within which to interpret and theorise the research findings (Marshall & Rossman, 2011: Check & Schutt, 2012). When a researcher sets out to investigate an issue, it is from a position of knowledge and this knowledge will frame the enquiry. Often case studies begin with a particular theory and seek to apply it to one or more cases in order to test the theory (Babbie, 1998; Cohen, Manion, & Morrison, 2011; Rule & Vaughn, 2011). This is useful for testing and developing theories in new contexts.

During the 20th century scholars from the disciplines of architecture, urban planning, sociology and geography were writing about space (Massey, 1994; Harvey, 2004; Relph, 1976; Tuan, 1975). Many of them cite the work of Henri Lefebvre, a French Marxist theorist. His major work the *Production of Space,* as mentioned in a previous chapter*,* was an English interpretation of "*La Production de L'espace",* published in French in 1974. Lefebvre, who mainly wrote about Paris, described three important concepts of space or the triads as being: "Spatial Practice (perceived space), Representations of Space (conceived space), and Spaces of Representation (lived space)" (Soja, 1996, p. 65). He translated and expanded these concepts into his 'ontology of space', represented in his text as a circular diagram showing how *perceived*, *conceived* and *lived* spaces influence each other in an ongoing cycle.

This triad can be used as a strategy or instrument to analyse the concept of space in any discipline.

Edward Soja emerged as a Lefebvre disciple and exponent (Soja, 1989). His concept of Firstspace, Secondspace and Thirdspace developed out of Henri Lefebvre's text *The Production of Space*. He offered a third possibility that combines some elements of each but creates a new, fusion epistemological critique. He used the concepts of everyday life, lived space, and difference and used them very differently than in Lefebvre's own work.

Relph (1976, p. 43) presents an alternate approach to understanding space and environment focusing on the 'lived-world' with settings and situations we live and directly experience daily and through day-to-day activities. The context for space is provided by the place and meaning is derived from particular places. He outlines a variety of ways in which places are experienced and that practical knowing of places is based on explicit functions that places have. The significance of the place is more than the activities taking place there. He suggests that there are diverse meanings of place and his concept of architectural space will be used as the focus for this study in which he states that this space is not based on experiences but is concerned primarily with the function of the space. Secondly, cognitive spaces are an abstract construct for reflection and has little consequence for direct experience (Relph, 1976, p. 25). Thirdly existential spaces or lived spaces that is the inner structures of space, which are the concrete experiences of members in that space, will be the final point of focus.

The key concepts used for this study will be then:, Lefebvre's three concepts of space, Soja's three concepts of 'trialectics' and Relph's approach to understanding space and place by the experiences in a directly lived-world. These spaces are full of meanings and have real objects and activities are conducted in them. Library spaces are social spaces that are produced and experienced, and they are also being produced through the experience of

their users. Academics have a particular mental view of the library, an expectation of the library and use it differently. Lefebvre's conceptual triad will assist with this.

In the next section, a discussion of the theoretical framework using Lefebvre's theory of space will be used for library spaces. Lefebvre's theoretical approach helps to shed light on issues ranging from the place of the library in a globalised world and virtual space to the conceptualisation of libraries as place within the academic environment and the everyday use of library spaces by users. His theory underpins this study.

3.2 Lefebvre's theory of space

This section will discuss the three important concepts that Lefebvre postulates as a strategy or instrument to analyse the concept of space in the library.   Lefebvre authored the following works: *Sociology of Marx (1968), Dialectical Materialism* (1968*), The Explosion: from Nanterre to the Summit (*1969*), The Production of Space* (1974) translated by N. Donaldson-Smith in 1991; *Critique of Everyday Life* I (written in 1974, published in English in 1991) series; *Writings on Cities (*1996), translated by E. Kofman and *Critique of Everyday Life II (*2002), David Harvey and Edward Soja have written about his triad. This study will explore the academics lived, conceived and perceived spaces of the library.

Lefebvre, in the publication, *Production of Space* (1991), promotes the concept that space as primarily linked with social reality. Schmid (2008, p. 30) states that: "it follows that space in itself can never serve as an epistemological preliminary position. It cannot exist by itself; it is produced". Schmid (2008, p. 30) further states that: "accordingly, space and time do not exist universally. As they are produced socially, their meaning and understanding can only occur within a specific society". In this sense, space and time are not only interpersonal but essentially chronological. He goes on to explain what dialectical thinking means: "first of all, it means the recognition that social reality is marked by contradictions and can be understood only through the comprehension of these contradictions".

As a result of this, throughout our lives we are involved in efforts to shape the space in which we live and at the same these established and evolving spaces are shaping our lives in many different ways (Soja, 1996, p. 96). There is a critical awareness that we are spatial beings from birth. Embedded in Lefebvre's ideas was a fundamentally new way of conceptualising space and the spatiality of social life. Although the library addresses personal, social and professional needs/visions (Khoza, 2016a), but the understanding that will be taken into my study is that the library is a social space, both physical and virtual.

In *The Production of Space,* Henri Lefebvre (1991) claims that in the Western developed world the physical and concrete aspects of human life are categorised in terms of numbers, possessions, and groupings. He states that places are not just made up of thoughts or concepts, but are filled with experiences of the lived-world and these come with their own meaning and have actual individuals present in them engaged in ongoing activities. His intention in writing this was in the hope of liberating the experiences and activities of everyday life by acknowledging physical knowledge and experience, which should result in social spaces that are different with real and existing societies (Carp, 2008, p. 130).

Lefebvre theorises that "space is neither a 'thing' in itself nor a 'container' for society. Instead he redefines space where the physical and mental realms are lived simultaneously. Space cannot be treated as an equal entity, it has a tripartite quality – mental (personal), physical (professional) and social (societal), each constituting an expression of the whole concept of space" (Lefebvre, 1991, p. 73). According to Lefebvre (2002, p. xxvii) "the social character of space is produced by every society and embraced by it. Social relations 'venture themselves into a space, becoming a part of it, and in so doing produces that space itself". Lefebvre (1991, p. 129) states that: "Social relations are an important part of the lived experience and this space reproduces and shapes it". According to Khoza (2016b) these spaces represent personal, societal/social, and professional visions. In other words, personal spaces represent or address library individual user's needs, social spaces address societal needs and professional spaces address subject/discipline/professional needs.

Lefebvre states that "(Social) space is a (social) product and that every society produces its own space" (Lefebvre, 1991, p. 31). He suggests that space as a product of society is changed when society changes. The changing of society precedes the changing of space. This can be likened to the changes taking place in the library domain. The changes in ICT, pedagogy, higher education and universities have happened already and the library has to respond by changing its spaces. These changes in the society are driving the changes in the library space. Lefebvre is of the view that "the spatial practice of a society secretes that society's space" (1991, p. 38).

In his explanation of the production of space, Lefebvre (1991, p. 38-39) refers to three important concepts: "spatial practice (perceived space), representations of space (conceived space) and representational spaces (lived space). He refers to them as 'formants' or moments in the creation of space". These concepts have a double designation of being referred to as the triad of "spatial practice", "representations of space," and "spaces of representation". As well as being referred to as "perceived," "conceived," and "lived" space" with a double designation. This triad exemplified in Figure 3.1 can be used as a strategy or instrument to analyse the concept of space in any discipline, education included. This will be used to attain a deeper understanding of the library space.

Spatial
Practice

Perceived

SPACE

Conceived

Lived

Representation of
Space

Representational
Space
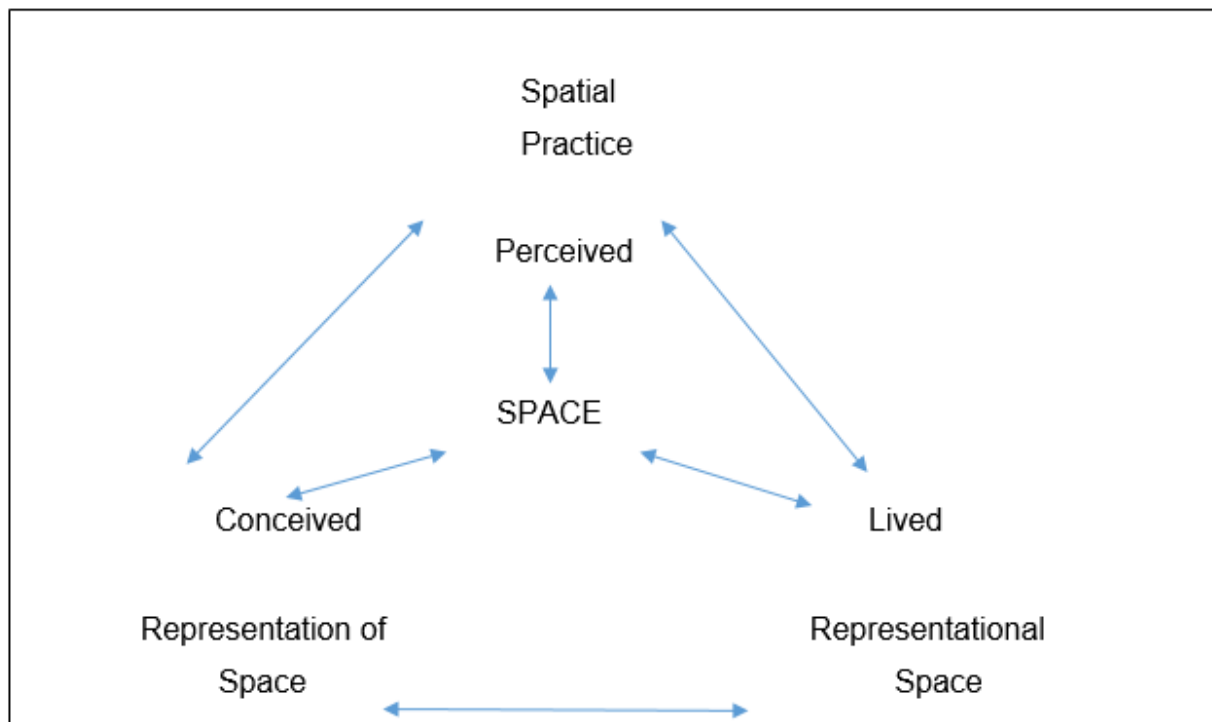
Figure 3.1 Lefebvre's conceptual triad (from Milgrom, 2008, p. 270)

Carp (2008, p. 130) states that: "each element of the triad represents a part of the social production of space. The relationships between these 3 concepts reveal the processes by which people produce space and are swayed by space in everyday life". (Milgrom, 2008, p. 270) concurs that: "space is at once result and cause, product and producer". This additional element means that space cannot be detached from itself but influences the social practises that define representations of space, spatial practice, and representational space. Schmid (2008, p. 31) explains the triad or "trinity is at once single and social; it is not only constitutive for the self-production of man but for the self-production of society. All three concepts denote active and at once individual and social processes". "The three concepts can also be seen as Form (perceived), structure (conceived), and function (experienced). When each of these concepts are used independently, it serves some homogenizing strategy" (Lefebvre, 1991, p. 369).

Lefebvre outlines the circularity or distinctness and categorising qualities that are present simultaneously in this dialectical process by saying that:

"Social space contains a great diversity of objects, both natural and social, including the networks and pathways which facilitate the exchange of material things and information. Such objects are thus not only things but also relations" (Lefebvre, 1991, p. 77).

He defines space as the lived space happening within the physical and mental realms. It reproduces shapes and shapes social relations. This is a multifaceted processes where:

"every social space is as a result of the processes with many aspects and many contributing currents, signifying and non-signifying, perceived and directly experienced, practical and theoretical" (Lefebvre, 1991, p. 110).

This may seem to be a spherical argument, but it is actually a response to the fact that the process of producing space is a spherical or repeated one, and that space is always shifting as conceptions, perceptions, and lived experiences shift.   The conceptual triad puts theorising (mental actions or the life of the mind) in mindful, shared relationship with both awareness (the life of the body) and significance (unmediated lived experience). Carp, (2008, p. 131) states that, in his analysis,

"Each aspect of the triad will be considered from two standpoints: a) the space that is produced and experienced (existing materiality) and b) the producing of space through experience (human being). Each of these standpoints can be analysed but in reality, they occur simultaneously. Each part of the triad has distinguishing features, but at the same time each concept is held in n relation to each other within each of the three aspects. By using the triad to analyse a given situation this attends to both "*what it is we are looking at* and

how it happens while we are looking at it" (Carp, 2008, p. 132).

As Lefebvre (1991) further explained, there is a super-imposition of these social spaces, where corresponding layers of meaning occur and move through time. People superimpose their experiences on space, and this may change over time. People's experience and understanding of the library space changes from their usage as an undergraduate student to postgraduate student to academic. The use of the space is changing with their roles and interactions. Lived space has the basic feature of being naturally unstable and lacks consistency of meaning. Lefebvre's viewpoint is that the space of society is seen as the triad of spatiality, and he describes the three key concepts as physical space, mental space and social space – which are encountered as lived spaces, the space of human action, which is both perceived and conceived and occurs simultaneously.

Carp (2008, p. 132) states that:

> "since the conceptual triad's aspects refer to the physical space/lived experience relationship, each aspect can be approached from either the physical standpoint (for example, places, tangible processes of production and consumption: signs, codes and pictures) or the standpoint of lived experiences (for example, human activities, sensations, thoughts, imaginations, attitudes). Each of these standpoints can be analysed alone as it will then not truly represent social space. Just as the physical aspects of space are difficult to know without one's bodily senses, the social aspects of space are formed by each person's previous perceptual development (for example, acculturation) in relation to particular physical spaces. Theses spaces are filled by specific cultural practice and products".

As social spaces, the lived experience is observable and practical (spatial practice); whilst the conceived is an idea and built as a result (representations of space): and these spaces extend beyond usage and thought, it is made up of immediate experience (representational space). Representational space is the third aspect of the spatial triad which is directly experienced or is the lived-experiences with its related symbols and imagery. It is the space of 'inhabitants' or 'users'. This space has its source in history (Lefebvre, 1991, p. 41). This lived space is shaped by daily and routine activities of its users in an actual and subjective space. It is space that is naively experienced by the 'users' (Gronlund, 1995, p. 2). Crang and Thrift (2000) warn that lived spaces are subtle and in the experiential realm and that conceived spaces will attempt to correct and dominate it and will even try to rationalise and take over this, and this can be seen in the work of architects and planners of space. They have a conception of a space and build it accordingly. The library literature in the latter part of the 20th century illustrated this where architects, designers and planners were reconfiguring space on their conceptions of digital technology and changes in learning styles rather than building them on the needs and experiences of users (Bennet, 2005; Freeman, 2005; Bryant, Matthews & Walton, 2009).

Lefebvre (1991) believes that to fully understand the workings of space, it should not be disjointed. He emphasises that space is the foundation for understanding human history. In this way, the three concepts of space can be a site of conception, a site of production and a site of experiences and consummation. According to Lefebvre's definition of space, the library is a constructed landscape (site of creation), influenced by the social, cultural and political landscape (site of production) and a site of experiences by sets of representatives. These spaces have a mixture of culture and perspective (Ley & Duncan, 1993). Consequently, the different ways of understanding or knowing the library will arise from the lived-experiences of the individual user or a group or community of users and their interaction with the place. Their understanding and knowledge of the library space will also arise from the traditional and historical understanding of the space as a result of what takes place in the library, that is quiet study, group study and a storehouse of collections, to name a few. These different tenets of perceived, conceived and lived spaces will be

discussed together to form a unique interpretation of the academics' identity, their conscious awareness and understanding of the library space and their use of the physical and virtual or hybrid library.

3.2.1 First concept: Spatial practice or Perceived space

Lefebvre's first concept of space is spatial practice or perceived space. It is defined as the simultaneous actions of social subjects within the physical and mental as well as the dimension of time. It refers to the daily arrangements, habits, and shapes of movement in physical places, which are conducted for a variety of purposes and feelings within those movements in a given area" (Carp, 2008, p. 132). These arrangements, habits and movements are filled with meaning and the domain in which they occur can be referred to as a discursive field. The space of the Library is suggested as the discursive field to be studied (Karlsson, 2003, p. 34). Karlsson (2003) used the theory in her study to illustrate how apartheid practices were embedded in school spaces and shaped social relations. The study analysed school spaces as a combination of the triad, with the representational spaces being the activities of teaching and learning which were lived experiences of the learners, and the physical objects within the schools as the perceived space and the conceived spaces were the rules, regulations and discipline within the school. Likewise this study will attempt to use the triad to describe how the representational spaces of the library are the activities taking place within it, both physically and virtually, and the physically perceived objects of the library like collections and the conceptions are the requirements of the university in the form of research, teaching and learning.

This is the production and reproduction of space in specific locations and within social settings. This space is located between everyday activities, routines and practices and these daily activities influence the way the space is organised, controlled and what action occur within it. This leads to the formulation of spatial zones or spaces of different kinds. An example of this emergent spatial zone is that of learning, knowledge, and workplaces. It

is not a space that constrained, static, or uniform, but is adaptable and ongoing (Savin-Baden, 2008, p. 9).

Carp (2008, p. 132) suggests that: "the perceived space is about the physical perception that in present in human minds about the physicality of the human environment".   It can be grasped by the 5 senses of sight, feeling (touch), taste, hearing and smell which is an important part of social practice. Perceived space is physical and require the senses to experience and is therefore tangible, textured, visible and audible - it can be seen, felt, smelt, and heard, and so on. She explains further that: "… the perceiving dimension of spatial practice refers to why and how we move our bodies in observable ways (patterns, rhythms and routines) in a given space or area. It relates to the materiality of the elements that constitute space" (Carp, 2008, p. 132).   Different experiences may be had by people in different ways in the same space because of their perspectives, positioning and, by their activity, their time of life (in years) and by the period in their life either as child, teenager or adult (Rottenberg & McDough, 1993; Allen & Pryke 1994; Carp, 1997; Nisbett, 2003). These concepts speak directly to the different experiences library users may have in the space because of their perceptions, positions in the university and what activities they conduct in the library.

Physical space is also people's perception of the world and is related to the activities conducted in the space and it is commonly known that we are familiar with those places that we conduct this activities in. The knowledge or perception of places comes from regular usage of that space and people associate particular sounds, smells and sights to these places; how the space has changed over time; and their secondary features such as other occupants of that space with their interconnecting spatial practices. We can recognise social spaces through the range and knowledge of our perceptual experiences of them. Consequently we do not know places that we have not been to. We may know "representations of the places" (through photographs' documentaries, maps, stories, histories). We may know these places in the abstract but nothing perceptible. Of relevance for this study is what Carp (2008, p. 134) refers to as: "the ways in which we think and

discuss space (that) are strongly influenced by the spatial practice/perceived space that underlies our knowledge and experience of space and society. These are primarily mental activities".

Spatial practice according to Lefebvre, (1991, p. 288) is defined as:

- "the routine spaces of everyday life, the relationship between the national to international, and the representation of that relation, actions and signs;
- spaces that have been made special by symbolic means which can be desirable or undesirable, benevolent or malevolent, sanctioned or forbidden to users of that space. From an analytic standpoint, the spatial practice of a society is revealed through a deciphering of its space".

According to Zhang (2008, p. 893) examining a space, "involves computing its elementary physical description as well examining the space as a 'mental' chimera; which is manifested in the individual and collective patterns of perception. These patterns of perception are filled with symbolism (through signs and symbols) and places considerable emphasis on our perceptions and experiences of space". As a result of these thick layers of implication, the symbolism devoted to numerous spaces can relate stories about how they were designed and constructed. This approach appeals to the rich, practical and explanatory concept of space (Zhang, 2008, p. 893).

This is also the area of straight emotional encounters as we do not understand space only by our senses, we inhabit it, we imprint our personality into it and we are secured to it with emotional bonds. Relph (1976, p. 10) states that "space is not just perceived, it is lived and through particular experiences, perceptual space creates places of special personal significance". Relph (1976, p. 11) suggests that the "people have a need to associate thinking, perception and meaning to specific places that may be significant". Places then reflect the variety of human experiences.

Edward Soja has written many commentaries on the works on Lefebvre's triad and has extended Lefebvre's writings and states that Perceived space is also known as Firstspace in Soja's terms. Firstspace is not a place, but is rather an understanding of space as that which can be observed empirically. Firstspace epistemologies are often explained as a "formal science of space" (Soja, 1997, p.75). Methods for perceiving space this way include, for example, quantitative data collected from sources such as satellite imagery, remote sensing, and other Geographical Information Systems. Firstspace epistemologies also include behavioural mapping and/or critical human geography, as long as these observations are made through objective, mechanised methods (Soja, 1997, p. 76-77). As Soja explains, one of the limiting functions of Firstspace epistemologies is that they often consider space as being manipulated by human or non-human factors, and do not take into account the inverse of this - how spaces construct identities and knowledge.

3.2.2 Second concept: Representations of space or Conceived space

The second concept or aspect of Lefebvre's triad refers to the materialisation of ideas that are linked to systems, dialogues, reproductions, images and approaches. Space cannot be perceived if it has not been conceived of in thought previously. Carp (2008, p. 134) describes this aspect as: "the mental activity about physical space rather than the physical activity. This concept exists as ideas, thoughts in words, or on screen but are not in themselves physically present. It refers to the mental activities of thinking, imagining, reflecting, illustrating and so on, as can be an individual activity or an activity undertaken by a group or collective". Representations of space comprises a 'system of verbal signs' both written and verbal. This concept will assist in the understanding of how academics experience the library space, their thoughts on what the space is and how they use this as a result of their conceptions and experience.

Lefebvre, (1991) explains this aspect as the mainly spoken and mental activity of scientists, planners, and architects. They create the conceived spaces from what is lived and what is

perceived. Although the task of architect, planners and designers are to create the representations of space, many people are engaged in the thinking, reflecting and imagining the built environment than those that are actual designing and building it. Lefebvre (1991) suggests that lived space is contrary to what is planned and regulated for that space. As social space, any location produces many conceptions and thoughts among the 'inhabitants of that space' about what is happening there, what should happen there, and why. Users have various concepts of the library space, what activities should happen there, what should be housed there and why it should be so.

Architectural plans and designs for libraries can be viewed as Representations of space or conceived spaces because they are presented in spatial forms. These 'real' spaces are created around the function and activity that takes places within and considers what has happened there in the past and present, such as the design of buildings. Savin-Baden (2008, p. 10) describes these "symbolic forms as representations of space that act as reflections of the social relationships and in this way can exert order and control in that social space".

Another aspect of Lefebvre's triad is the representation of space as a concept or thought. It is the space constructed by people in power such scientists, planners, and social engineers who identify the lived experiences of people with what is conceived and construct a space that may be abstract but is filled with the knowledge of space and a mixture of understanding and thought. These spaces consider the social settings and the political landscape. This space is therefor always in a state of flux or change. The relationship among the various facets in the production of space is not direct.

Lefebvre (1991, p. 26) contended that conceived spaces can operate at different levels — that is, at the local, national, provincial, and international and operate simultaneously. The corresponding layers of social space co-exist within a single community. Lefebvre (1991, p. 86-87), suggests that these "different layers of social spaces penetrate one another and may also superimpose themselves upon one another. There are no boundaries that limit their

relationship with each other and they may possibly clash or collide as well. The relationship is disruptive".

The production of space influences the representation of space and this concept has an important role to play (Lefebvre, 1991, p. 42). This space is referred to by Soja (1997) as Secondspace. It is a conceived space of the imagination. Secondspace epistemologies conceive of spatiality as a highly subjective experience. Here, explanations of space become highly introspective and individualised. Secondspace poses a challenge to Firstspace understandings, but they can also overlap, especially in the area of human geospatial mapping. Secondspace is the arena of artists, urban planners, and utopian 'urbanists' (Soja, 1997, p. 78). These spaces do not yet exist, or are so subjective as to never have existed at all, as in the "cognitive mapping" experiments that were popularized in the 1990s (Soja, 1997, p. 79).

The next section discusses the third concept of Lefebvre's triad.

Soja (1997, p. 66) describes spatial practice as the "process of producing the material form of social spatiality and is presented as both medium and outcome of human activity, behaviour and experience". Calling this space 'Firstspace' Soja (1997, p. 77) observes that the production of this social space is real space and due to the changing geographies leads to the urban built form of physical buildings than can be seen and takes consideration of the natural environments. While there is acknowledgement that Firstspace is socially produced, he pays insufficient attention to how the geographies and spatial practices may have an influence on perception, consciousness, experiences and sociality (Soja, 1997, p. 79).

3.2.3 Third concept: Representational spaces or Lived spaces

This third aspect of Lefebvre's conceptual triad refers to the actual lived-experiences and is combination of the physical space and mental space. "From the physical standpoint,

representational spaces suggest that places have a deep sense of meaning based on the experience of living in it, in the present and in the now. The experience of communal and/or group spaces as well as private spaces are included in this aspect" (Carp, 2008, p. 135).

Lefebvre (1991) writes that representational spaces or lived spaces are experienced directly by individuals and communities that inhabit them, and there is a connection through the symbolism of the physical space, such as the Library of Congress in Washington, DC, US. Zhang (2008, p. 894) states that:

> "rather than accepting the design of buildings or towns by designers who had various intentions, perhaps different from the lived-experience, directly lived spaces reflect their images and symbols, and in this way the space of users, is embodied in their dynamic engagement with that given physical space".

Soja (1997) refers to this third concept as Thirdspace or fully lived space that is simultaneously real-and-imagined spaces. Soja refers to this as: "the space of radical openness, the space of social struggle" (Soja, 1997, p. 68). This is lived space, where we actually exist as social beings. Thirdspace is something of a no-place, except as it exists as a 'here and now' spatial and temporal experience. As soon as it is rendered materially, either visually or textually, the space becomes either perceived (Firstspace) or conceived (Secondspace). This space is ever-changing, dependent upon social and historical contexts. Thirdspace is the chaotic, liminal space between perceived and conceived space, and past and future time. It is where power and 'alterity' are accommodated, negotiated and resisted. Alterity is a philosophical term meaning otherness, or in the sense of the other of two. Thirdspace provides the opportunity for direct action and relationship-building, in ways that are not always anticipated or observable. Thirdspace is the concept of all spaces and moments together; it is the radically open, infinite space of "The Aleph" (Borges, 1971, as quoted in Soja, 1996, p. 2). Thirdspace for Soja is a critical possibility. He sees this as an emergent understanding that the reality of existence lies somewhere in between that which

is known, or real, and that which is believed, or imagined and for the library spaces that is a critical possibility, of what is real or imagined. Thirdspace concepts of lived social change, rather than material or rhetorical social change, remind us that transformation is not only possible, but it is *always already* occurring in the messy, lived social environment. (Grady-Smith, 2012).

While Firstspace perspectives are more objectively concentrated and highlight 'things in space', Secondspace perspectives tend to be more personal and related with 'thoughts about space' (Soja, 2001, p. 11). In the view of Soja (1997, p. 67) these spaces are both distant from the above mentioned two spaces (spatial practice and representations of space), and incorporates them. The real and imagined spaces is combined in Representational spaces (Soja, 1997, p. 10). Here, space is directly lived and by combining both the real and imagined - that is, the perceived and conceived –lived spaces subsumes both spaces because of its positioning.

Calling this space Thirdspace, Soja (2001, p. 3) views lived space as "a space that could transform all other spaces simultaneously from a strategic location that is all-encompassing". Soja suggests that Lived space is the space of comprehensive similarities and differences, perils and possibilities, openness and social struggle" (Soja, 1997, p. 68). His use of the term Thirdspace was to employ an "innovative way of thinking about space and social spatiality, a term that is cautious as well as flexible and term that attempts to capture the environment that is continuously shifting and changing with ideas, events, appearances and meanings" (Soja, 1997, p. 2).

According to Soja (2001, p. 6) "he likened the understanding lived space to be similar to writing a biography, whereby a description and understanding of the communities and societies is to be used to obtain an interpretation of the lived time of an individual. In all these 'life stories', perfect or complete knowledge is impossible. There is a lot that is unknown and unknowable, for a complete story to be told. The best we can do is selectively

explore, in the most discerning ways we can find, the unlimited complexity of life through its central spatial, social and historical dimensions" (Soja, 2001, p. 6).

Lefebvre writes (1991, p. 41) that lived spaces are "highly complex and quite unusual, because 'culture' intervenes here …" Space occurs within the realm of time, and sociologically it is of interest because it deals with the way people relate to each other or communities in a social space or setting (Karlsson, 2003, p. 19). Representational spaces change as the use of the space changes and it is people may have different experiences in that space as the space is altered and this change of use may not be easily detected. For example, the library is a representational space of study, learning and research that many users experience as quiet, and collaborative, while others experience it as a symbolic place, not an actual, silent workspace.   These lived experiences represent differences and sometimes opposing experiences and each experience may have different beliefs that may not be understood or known by all those users, only because it is not a similar experience.

(Lefebvre, 1991) urges that when analysing any social space, because they are not independent and share an interconnectedness, this interconnection is important to retain because it analyses space in all its dimensions. When analysing social space and spatial relations, the conceptual triads can be used as a framework. For Lefebvre, there is a parallel development between the domination of Western capitalism (which he believes is a social process) and the production of space. Lefebvre posits that power is exercised in and through space and as a result Western capitalism has created classification and social fragmentation. This study maintains that the 'corporatisation of the university' and the advent of information technology (or a form of capitalism) has likewise created homogenisation and fragmentation with the creation of the teaching framework and research imperative. This study will look at the library as a space – physical and virtual and will attempt to recognise divergent, incommensurate understandings that are openly associated with the physical features or awareness of that physicality that is experienced rather than as a concept that is mainly mental and abstract.

Carp, (2008, p. 137) states that "academic use of the conceptual triad will enable academics to focus on the socio-spatial complexity of the library space. Through self-reflection researchers will be able to distinguish between their expectations and their actual observations". These expectations maybe unrelated to the place and therefore not appropriate to its future. The actual observations of a place may assist with their sense of place, as this is experienced over time and not as a passing observer. To understand and know the sense of a place well, the researcher has to have sufficient lived-experience of that space.

Lefebvre's triad of the three concepts: perceived, conceived and lived was done in the 1930s and at the time of the development of this theory, the concept of virtual or digital space was not in place or considered at the time (Milgrom, 2008, p. 278). Digital space is defined as those spaces where communication and interaction is assisted, created or enhanced by digital media and more recently those connected with the Internet and Web 2.0 technologies. The digital space has changed the nature of library usage where academics are forced to retreat to their offices and desktops to access the library. These are spaces that change with and through the technology, change learning in many ways and become the dominant spaces of engagement. Carp (2008, p. 131) states that several authors have indicated that of the 3 concepts, the 2nd aspect of representation of space (conceived) was most difficult to use when doing analysis. Space co-exists with localised everyday experiences. Space is not a mere setting for the relating of events of our lives but a force actively involved in shaping our experiences. The key question for this study is how the concepts of space evolve, change and give meaning to various forms and practices of library use. Most discussions of space exclude the digital. Lefebvre's triad is used predominantly by geographers and urban-planners but for this study the concepts of perceived, conceived and lived space will be used in the library setting.

3.3 Soja's Social Spatiality

Lefebvre's thesis is the central logical framework of Edward Soja's *Post-modern Geographies* (1989*),* where rather than focusing on the physicality of space, as a physical background to social settings, space is viewed as a complex social construction. Soja posits that space is part of a dynamic process that challenges and is responsible for the production of what he terms: 'social spatiality', which has an element of the human life and is not confined to the physicality and design of space with the boundaries of the built environment. Soja (1997, p. 56) translates Lefebvre's triad as real and imagined Thirdspace and relates it to the contexts of the late 20th century. Figure 3.2 illustrates Soja's trialectics of being.
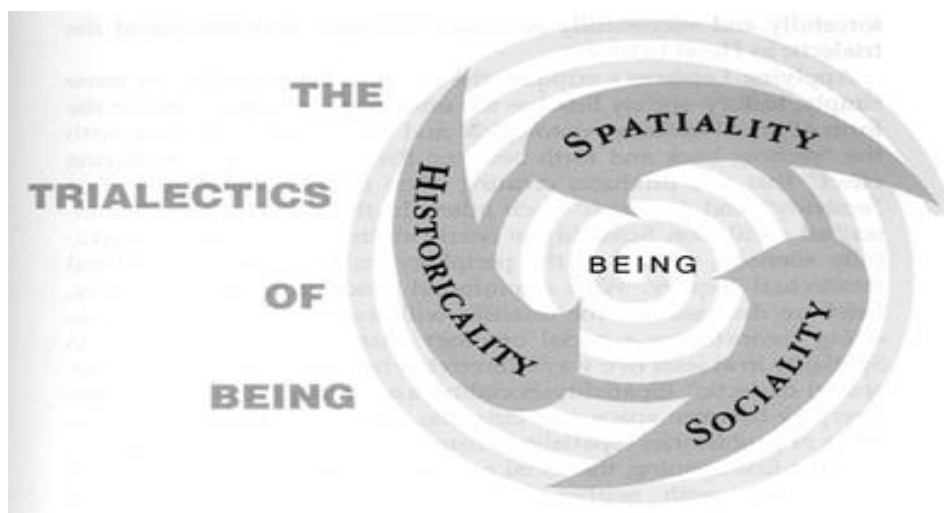
Figure 3.2: " The trialectics of being" (Soja, 1996, p. 71)

According to Soja (1997, p. 56),

> "when looking at social phenomena, physical space is important, but the spatiality of social life encompasses far more than the physical forms. Social spatiality can be defined real spaces and imagined spaces. It is a process that is constantly being produced and reproduced and deals with

material things in space as well as the mentally things such as thoughts, dreams about space. These aspects cannot exist outside of society and is similar to Lefebvre's socio-spatial dialectic in which social relations (forms and processes) shape and are simultaneously shaped by spatial relations (forms and processes)".

Using Soja's systematic description, space is seen and recorded, it is imagined and revised, *and* it is lived and experienced. The act of living, while simultaneously observing and dreaming what spaces could become, can alter places through, for example, political protests that lead to policy changes; tours that lead to map changes; or activist and artistic interventions that raise awareness about power.

Perceived	Conceived	Lived
Spatial Practice	Representations of Space	Spaces of Representation
First Space	Second Space	Third Space
Physical Space	Mental Space	Social Space
Form	Structure	Function

Figure 3.3 "Perceived, conceived and lived space"

Drawn from Lefebvre, H., The Production of Space (1991), and Soja, E., Thirdspace. (http://www.game-research.com/art_simcity.asp)

Figure 3.3 is an illustration of the spatial concepts by Lefebvre and Soja and shows the similarities and overlap of concepts.

The next section will discuss the link between space and place.

3.4 Space as Place

In attempting to explore academics' understanding of space, the concept of library as a place and space becomes important. This relationship is best described in the words of the Dutch architect, Aldo Van Eyck who said the following in his description of place, "Whatever space…mean(s), place mean(s) more, for space in the image of man is place" (Relph, 1976, p. 28). Place, in association with space has a number of interrelated meanings. He states that the: "meaning of space, particularly lived space, comes from the existential and perceptual places of immediate experience" (Relph, 1976, p. 28). In theorising 'place', Carmona (2003, p. 96) states that a "sense of place is discussed in terms of *genius loci* which suggests that people experience something beyond the physical or sensory properties of places, and can feel a connection to a spirit of place". This connections persists even though the space may undergo changes. Ralph (2003, p. 96) believes that this spirit of a place is something that is "understated, vague and cannot be described in formal and conceptual terms but is nonetheless extremely obvious".

Tuan (1975, p. 152) describes: "place as a centre of meaning created by experience which is not only seen through the eyes and the mind but through the passive and direct experience. Meaning and understanding of a place comes from abstract knowledge of the space as well as personal knowledge of people. Places are points in a spatial system". Experience creates places on different scales. Experience is an all-encompassing term for the different methods through which a person knows his world and understands his world. The meaning and experience of these places are beyond them as individuals. Both representational spaces of societies and individual ones are interspersed throughout shared spaces and are recognised and exemplified by the highly subjective and inter-subjective experiences of occupying the space in the present and relating it to the past and future (Carp, 2008, p. 135).

Massey (1994, p. 12) offers three suggestions about space, that space is continuously being constructed by the changing social relations and are always influenced by multiple viewpoints. Places are thus interpersonal and dependent, experienced and understood differently by different people. In this study it is therefore assumed that academics will experience the spaces differently at different times of their academic careers and their use will also be different at these times. Massey (1994, p. 2) debates the relationship between space and place and defines place as "social relations stretched over space, established by the combination of their different roles within a wider national and international, spatial divisions of labour". Therefore the features of specific places come with the complexities of social relations and operate within them and there is a place and position for these relations and this may extend further than that particular place. This analysis of sociology, economics and geography can be transferred to the library, it proposes that the quality of the places and spaces in which academics conduct their teaching, research and administration and other tasks – including the facilities, technology, furnishings – are produced by, and change according to the influences and relations that they have to other places. As Lefebvre states "space is continuously produced through the vibrant interconnections between and among places and social relations" (Bondi, 2005, p. 142).

The spatial triad may be used as a useful framework to analyse and understand the workings of society, including education. It provides an additional facet to a mere description of society. The inextricable link between social processes and space is emphasised by Soja (1996, p. 46) that:

> "All social relations become real and concrete, a part of our
> lived social existence, only when they are spatially 'inscribed'
> that is , *concretely represented* – in the social production of
> social space. Social reality is not just coincidentally spatial.
> There is no un-spatialised social reality. There are no aspatial
> social processes".

The spatial triad, or more generally, Lefebvre's conception of space which rejects some of the older conceptions of space and extends others, addresses the long-neglected facet of the understanding of social process. It simultaneously acknowledges the importance of history and sociality, all of which combined can only enrich understanding.

3.5 Space and Time

Relph (1976, p. 31) claims that the changing character of places through time is associated with the alterations to the buildings and landscapes, as well as shifts in our attitudes, and after a continued absence will seem quite different. This suggests that people's attachment increased with the length of time they spent or live there and that place changes its character for them because of this attachment and connection with the space.

Halbwachs (1992, p. 34) argues that the time and practices in a space give it meaning and these are individual memories that are connected with the space and cultural meaning are also associated with a space on a communal scale. As a result of these memories which are social and personal, significance and meaning is given to a place.   Identity can only be formed in these spaces if an extended period of time is spent with other people that inhabit the same space. By spending an extended period of time in the space, then is it possible to engage with the spatial and cultural practices that make up this space (Hetherington, 1998, p. 18).

Bhabha (1994, p. 47) suggests that space and time relate to the memories that people have of a place in their personal and cultural environments and they relate to the signs and symbols and events held in the space. This leads to the formation of their understandings of the space. This also leads to the construction of the identities of their self, identities of other people in the space each one with their own personal narrative. (Bhabha, 1994, p. 47).

Relph (1976, p. 31) suggests that "attachment to place indicates the enduring relationships between people and their place and this attachment will remain and will not change even though the world may change around it. He asserts that time forms part of the experience with the places and that these are linked to the space even if it changes or continues as is". More importantly he states that: "places are present expressions of past experiences and events and hopes for the future" (Relph, 1976, p. 33). In relation to the library use by academics, the essence of the place is not through its timeliness or in continuity but simply through dimensions that will affect users' experience of the place.

3.6 Spaces: Private and Personal

Relph (1976, p. 31) states that: "most places and landscapes are individually experienced, and this can be attributed to our outlooks, experiences and meanings, which arise from individual and distinctive set of situations". Place is therefore experienced individually and communally, because we are both individuals and members of a society. So the library is experienced by the individual user, as an academic and as a member of a community. Private places are defined by as those that are particular and of special significance to an individual because of experience of their individuality and identity encountered in that place. This place is unique and private because your experience of it is distinctively personal.

Hubbard, Kitchin and Valentine (2004, p. 98) state that "geographers are aware that as a result of the lived experiences of the people, each place will be distinctive". He goes on to elaborate that as such, people feel a sense of ownership and belonging to the space which provides an identity for them. Despite the 'hype' about the 'demise of the library' and predominance of virtual spaces, we are still inclined to identify an institution with its physical location. There is a cohort of literature on the library as a space and place and the spatial aspects of 'libraries. But the central focus of these studies has been the buildings,

design or the workplace itself. Harvey (2004) points out that even in the period of globalisation and internationalisation, there is greater emphasis and importance placed on place and the emphasis is on the history, culture, and environment in the processes of capital accumulation. Harvey (2004) concurs with Lefebvre that the process is spherical whereby social practices and processes create certain spaces and these practices and processes limit, facilitate and change these. Soja called that a 'socio-spatial dialectic'. This spherical process is also affecting ICTs and is changing our cities and buildings and the communication and interaction between people and the use of the ICTs change the communication and interaction between people. Due to the rapid growth of ICTs with its associated paraphernalia (mobile and wireless), it is accessible from any place, anytime and therefore the location not important and the constraints of space becomes a non-issue. This also applies to library spaces, with new ICT, the location of the library is becoming unimportant and irrelevant because it can be accessed from anywhere.

Furthermore, space can only be understood as part of the operation of society. Each portion of space has some particular importance (or meaning) and is used for a specific purpose. If space is a social and political phenomenon, then there may be little point in studying it in the manner that we know as geographical; it might only be understood by those who concentrate solely upon social structures. Space can therefore not be regarded as something meaningless. In fact, space is laden with meaning. If one wants to arrive at an understanding of society, of the ideologies that motivate it, the answer will lie in an analysis of that society's space.

The effect and influence of social processes on the production of space, is also highlighted by Wegner (undated) who states that a number of more recent writers have considered how space itself is both a place of *production*, formed through a wide range of social processes and human involvements, and, as a result this influences, directs, and demarcates the possibilities of action in that space. Modernity, as Soja emphasises, is thus to be reconceptualised as both an historical and a geographical-spatial project, a continuous dissolution and reorganisation of that environment. Space also provides the locus from

which we can communicate many of the notions crucial to these histories: representation and addition, limitations and movement, belonging and segregation, place and mobility.

Morgan (2000, p. 273) concurs with the idea that "space must be viewed as a construct of the social environment which is linked to the political landscape of inclusion and exclusion. He explains that terms such as "location", "space" and "place" "are no longer restricted to exclusive use by geographers". Space is viewed as something that is produced by human activity. Morgan (2000, p. 278-279) goes on to cite Harvey who asserts that the production of space is linked to power and politics. Harvey states that social spaces are made up of the complexities of individual's perspectives, outlooks and images of the space they occupy. One criticism of Harvey's views is that it does not make explicit the other axes of power such as race and gender in the production of space. Spaces may be organized to keep 'others' out and that space can be enabling or restraining. There are limits to spaces and some people can dominate space to exclude others (Morgan, 2000, p. 279).

Space is always open to interpretation and disagreements by many individuals or groups. Massey (1994, p. 151) noted that different social groups may have a variety of different notions of space. These groups may have differing levels of commitment to the place and with that comes their differing levels of mobility and ability to travel and varying degrees of spatial power. This interpretation can be likened to academics who have the ability and propensity to conduct their research and teaching in spaces they prefer because of their flexibility and mobility.

Lefebvre asserts that controlling effect of space is evident in its significance and comes with certain element of power. He continues describing space with the power to prohibit as well permit (Lefebvre, 1991, p. 132). Dear and Wolch (cited in Carmona *et al.*, 2003, p. 106) state space has influence on the society and vice versa and there is a relationship between the two. These "social relations can be organised through space, constrained by space and mediated through space. Space exists within the social context and in all social contexts

there is a spatial component. It is a continuous two-way relationship and process in which people (and societies) create and shift spaces while simultaneously being influenced by them in various ways" (Carmona *et al.*, 2003, p. 106).

Lefebvre (1991, p. 57) describes this power of space as having been in existence before the presence of individuals or groups and as much as they will infuse meaning in that space, they can also deny that meaning to the space. He provides this description:

> "Every space is in existence before the appearance of its users and these users are a collective or individual wanting to use the space. This space is pre-existing before the presence of the subjects, their action, discourse, competence and performance; yet the subject's presence, action and discourse brings meaning to the space and/or negates the meaning to the space".

Space proposes a certain order as well as a certain disorder. "Space fragments bodies, prescribing or proscribing gestures, routes and distances to be covered" (Lefebvre, 1991, p. 143). A feature of the exercise of power in space is territoriality. The library has had meaning for generations of its users and each individual or group of individuals infuses certain meaning into the space, but this changes with each group of users, but the enduring nature and meaning of the library space remains.

The next section explores this further by reiterating that place has meaning and is linked to the identity of an individual or the identity of a community, in the case of this study, the academic community.

3.7 Place and Identity

Lynch (1960, p. 4) defines the identity of a place as "that which provides its individuality or distinction from other places and serves as the basis for its recognition as a separate entity". He goes on to state that "identity is in the experience, eye, mind and thought of the beholder as much as in the physical appearance". So we are influenced by our experiences of places and our experience influences places. Carmona (2003, p. 98) is of the view that while personal engagement with space gives it meaning as 'place', a sense of place is more than this. Carmona (2003, p. 98) says that the physical settings of a place, the activities conducted there and the meanings thereof are the three basic elements that constitute the identity of places. There has to be human interaction with these 3 elements for it to have meaning. Budge (undated, p. 5) writes of an experience of belonging to a space as a result of the connections with family and community over the generations. Involvement with the community also creates a place that is better to live in. And some people experience place as being interdependent with the land. All of these groups experience a sense of place, and it becomes part of their identity". People display a tendency to identify with certain places. They form bonds with place and this forms part of their self-identity. Gruenewald (2003, p. 625-626) also asserts that places make people and people make places and places are important in identity formation.

People consciously associate with the identity of a place and this can be termed 'rootedness'. For Carmona (2003, p. 96) place means having "a secure point of view of the world with a vantage point and being confident in one's position in that space and a significant spiritual and psychological attachment to a specific place". Opposed to the sense of place is 'placelessness' which is viewed negatively. It signifies an absence or loss of meaning (Carmona *et al.*, 2003, p. 101).

Some humanistic geographers speak of the importance of place and peoples' connection to and love of place. This may be linked to for example, the place where we grew up, places with fond memories etc. In the same way people may identify negatively with places. These

could be places where bad things may have happened or it may be associated with people we do not like. These links with places reflect particular circumstances (Storey, 2001, p. 18-19). Carmona (2003, p. 97) concurs that: "lived-experiences gives places meaning. By individuals, groups or societies doing they change 'spaces' into 'places'".

The emphasis is on the sense of belonging and the emotional ties people have attached to a place. "The places in a person's world are more than entities which provide the physical platform for life's experiences. Some places have profound meanings and symbols of experience for people and as such they lie at the core of human existence" (Godkin, 1980, p. 73). "An individual's place identity is closely linked to the private and cultural identity. There are many proportions to meanings attributed to place: symbolic, emotional, cultural, political and biological" (Buttimer. 1980, p. 167). Places can also be seen in several different ways. The view of the street would be very different place for the pedestrian and a different place to a driver. As a result of their different experiences and purposes with the same place, therefore the street takes on different identities. But Relph (1976, p. 56) states that "places have some socially agreed-upon features that are enduring and long lasting and these are used as reference points".

The public identity of a place is common to the various communities of knowledge in a particular society and there is a set of agreed-upon physical features and other components of the place. In further support of using space as a framework for analysis, I refer to Lefebvre's (1991) assertion that space is the product of society. Lefebvre's theoretical approach could help shed light on issues ranging from the place of the library in a globalising world order, to the conceptualisation of libraries as places with the 'public sphere' and the everyday use of library spaces by patrons. With the arrival of the ICT, library spaces as places have not disappeared. They are still distinctive places with a particular role (lived spaces) and their identities are linked to each user or group of users using that space. The library as a space will endure with certain physical features, services and facilities and as a conception (conceived spaces) for those not using the physical, but as a symbolic traditional space (perceived spaces) that is necessary in the academic environment.

Ramson, (2015, p. 1) states that theory can be used as a framework or structured lens through which aspects of parts of the world can be observed and the 'how' and why' questions can be analysed and explained. Theories provide the frameworks for the study's research questions to be answered, interpretation of the information and assisting in obtaining meaning in the study. It thus enables the application of lessons learnt in the research to the world of everyday life whereby things can be seen from new angles and perspectives. Lefebvre's theory will attempt to answer how academics conceive, perceive and live in their spaces – personal, social and professional.

3.8 Summary of the chapter

This study used the framework of Lefebvre's conceptual triad of perceived, conceived, and lived spaces to understand how academics use their personal, professional and social places in relation to the triad. These three concepts of space can be a site of creation, production, and experiences. According to Lefebvre's definition of space, the library is a constructed landscape (site of creation), influenced by the social, cultural and political landscape (site of production) and a site of experiences by sets of representatives. This knowledge emerges from understanding the space is a place and become so after it is imbued with meaning and experience, as a space that is real and imagined, that operates within a dimension of time and that people's identity are very closely linked to the place. The process of producing space is a spherical or repeated one, and shifts as conceptions, perceptions, and lived experiences shift and change.

Lefebvre's theory is an important conceptual tool for understanding of the processes of space, His theory concentrated on the everyday life and lived experiences of people and that space is closely related to the social product (Lefebvre, 1991, p. 66-67). It is hoped that in the final chapter a partial illumination will take place to understand academics perception of library spaces.

Lefebvre's theory of space whereby space is primarily bound up with social reality will assist in the methodology and choice of instruments and is directly linked to the data collected. The descriptive case study will attempt to examine the particular phenomenon – usage of library space, both physical and virtual in a real-life context, the academics research behaviours. The next chapter gives the methodological orientation of this study and explains in detail the data production plan.

Chapter Four: Research Methodology and Design

4.1 Introduction

The previous chapter looked at the theoretical underpinnings that framed this study with reference to Lefebvre's theory of space. Lefebvre, in the publication, *Production of Space* (1991), promotes the concept that space as primarily linked with social reality. Library spaces are social spaces that are produced and experienced, and they are also being produced through the experience of their users. His theory postulates that the production of space is made up of three interconnected dimensions or processes and he refers to them as 'spatial practice', 'representations of space' and 'spaces of representation.' On the other hand, they are also referred to as 'perceived', 'conceived', and 'lived' space. The conceptual triad puts theorising (mental actions or the life of the mind) in sensible, collaborating relationship with both feeling (the life of the body) and sense (lived experience).

The purpose of this chapter is to discuss and justify the research design, and focus on the methodology and methods employed to produce and analyse data. This chapter outlines the research methodology used in answering the critical research questions in this study. Firstly who are the academic users of the library space, what are their understandings of this library space and how can this understanding of library space be theorised? A mixed methods research design was used for this whereby qualitative and quantitative data was collected and document analysis undertaken. The combination of these methods provided a better understanding of the research problem. This study is broadly located within an interpretive paradigm. The significance of the online survey questionnaire as a data generating tool in this study is outlined.

4.2 Research and design

The research paradigm directs the process of investigation and forms the basis for the practice of science by guiding the researcher towards appropriate research methods and methodologies, conditional on the nature of the phenomenon being investigated (Kuhn, 1970). According to Cohen, Manion and Morrison (2011, p. 21) "a paradigm is a basic set of beliefs that guide action". This research is positioned within the 'interpretivist' research paradigm and focusses on the experience and understanding and to attempts to understand situations and social phenomena and find meaning within them. Hennink, Hutter and Bailey (2011, p. 14) state that: 'the interpretive aspect means that the approach seeks to understand people's lived experience from the viewpoint of people themselves. Furthermore, the interpretive paradigm recognises: "that reality is socially constructed as people's experiences occur within social, cultural, historical or personal contexts". Therefore the intention of the study was to describe, analyse and theorise the experiences of academics in their personal settings and contexts. This paradigm also acknowledges that: "peoples' perceptions and experiences of reality are subjective, and there can be multiple perspectives on reality" (Hennink, Hutter & Bailey, 2011, p. 14). The interpretive researcher encourages a variety of data collection methods. Two methods were used for the study – survey and case study.

Surveys are characteristically, but not exclusively, quantitative in nature. Case studies can complement surveys by adding depth and texture to the bigger picture. The principal research design for this study is that of a case study because it is a description of an individual person or group with an organisational, social, political context and constrained by specific criteria. This study is a descriptive case study because it attempts to examine a particular phenomenon, namely the use of the library space, both physical and virtual in a real-life context, the academics research behaviours. In examining this particular event in a real-life context we are looking at a "bounded system in its own habitat" (Czerniewicz & Brown, 2014, p. 5; Maree, 2016, p. 81). The case study involves observation of the academics and a portrayal of their research behaviour in their natural setting.

For this case study, the unit of study is the School of Education's academics. The case study generated an understanding of and awareness of this particular case by providing a dense, rich portrayal of the case and revealing its relation to the broader context. This study did a survey of the entire population of academics at the Edgewood campus followed by the case study of the 7 academics to add depth to the findings and addressed some of the shortcomings identified in the survey. This is an intrinsic case study, in that it seeks to understand the particular conditions "that researchers use the space in the way they do" (Rule, 2011, p. 9).

Cohen, Manion and Morrison (2000, p. 79) list 4 purposes served by case study: "to portray, analyse and interpret the uniqueness of real individuals and situations through accessible accounts; to catch the complexity and situatedness of behaviour; to contribute to action and intervention; to present and represent reality – to give sense of being present there".

This ties in with the focus of this study, as its purpose is to obtain a deep level of understanding of the perceptions of a specific group of academics. It concentrates on the understanding of the individual participants' experience and observations of their professional roles as academics in their daily working environment, from the perspective of their unique settings and backgrounds and different sources and analysis methods in order to strive for validity. This research is undertaken in natural settings in order to collect substantial situational information (Henning, 2004).

The study conducts an intensive examination of a single case. Most case studies comprise the examination of many variables. In a case study the context is described in detail and aim to "capture the reality of the participants lived experiences of and thoughts about, a particular situation" (Cohen, Manion & Morrison, 2011, p. 182). Multiple sources of data is important in case studies so that the ideas are replicated and come together. As a result of the replication the researcher can be confident that the findings are reliable. According to

Babbie (1998, p. 283) "in convergence, multiple sources of data are brought to bear on the variables, using multiple methods, sometimes called triangulation" (Babbie, 1998, p. 283). Cresswell (2014, p. 14) defines case study as "an in-depth exploration of a bounded system based on extensive data collection over a period of time". Yin (2014, p. 17) corroborates this by stating that a case study "inquiry relies on multiple sources of evidence, with data needing to converge in a triangulating style". This study is a case study because it will be looking at the patterns of behaviour for specific individuals and a group of individuals and make an assessment of these patterns. The data analysis will be both descriptive and thematic development. This approach will allow the researcher to scrutinise a particular instance in a great depth, rather than looking at many instances casually.

4.3 Mixed method research design

Given the nature of the study, the research problem and purpose, a mixed method design was selected, which combined the methodologies of qualitative research and quantitative research. This was used to examine the 'research' behaviour of the academics.   Cresswell (2008, p. 552) describes a "mixed-method research design as a procedure for collecting, analysing and mixing both the qualitative and quantitative methods in a single study to understand the research problem".   This study used the explanatory sequential mixed methods design as described by Cresswell (2014, p. 224). This method was selected because the research is being carried out in two phases, macro (population) to in-depth (individual) which analysed the behaviour, attitudes and perceptions in the population to that of an individual or small sub-set of the population.   In addition to the statistical data, more detailed and specific information was gained by employing this research design. In keeping with the researcher's intention, Cresswell (2008, p. 405) stated: "the researcher wanted both the 'numbers' and the 'stories' about the issue of library space from the academics". The research purpose was to gain a holistic understanding of the case and the quantitative data provided an additional perspective but the combination of both forms of data provided a better understanding of the whole case by focusing on a key part.

The information generated from the survey questionnaire (quantitative results) helped to inform the case study (qualitative data) by pointing to the kinds of issues and questions that needed further exploration. The data from the demographic information in the survey enriched the case study of the particular community (Rule, 2011, p. 11). Cohen and Manion (1994, p, 196) argue that the use of a multi-method approach or triangular approach in social research comes with a number of advantages. One of the advantages could be that it helps to circumvent the problem of 'method-boundedness' which according to Cohen and Manion (1994) refers to the situation where researchers will selectively apply one method all the time, either because of knowledge and being familiar with that method or because they believe that this method may be superior. This method is not simply about collection of data, but it is how the different strands of data are connected and integrated (Cresswell, 2014, p. 226). By so doing the data from one source enhances, complement and elaborates on the data from the other source.

Quantitative research involves collecting data using authentic and reliable data collection instruments as well as collecting data from archival data sources. The data that is collected is in the form of variables and the analysis of the data involves establishing relationships with the different statistics collected (Gaur, 2006). Quantitative research methodologies will best establish the complete predisposition of responses from the participants and to note how the responses vary amongst them. Quantitative methods involves not on measuring the data but also pays attention to an understanding of the phenomena. This enables the researcher to arrive at a thick description of the phenomenon and what activities are in operation within the dimension of time and within a social setting. This will identify trends, attitudes, opinions and behaviour or characteristics of the academics. The results of such research can be generalised to the entire population.

The survey provided the quantitative data regarding the academics' use of the library space – physical and virtual, research behaviour and characteristics. The interviews provided qualitative data about the individual researchers' behaviour, their lived experiences and reasons for use of the space. By moving from the quantitative to the qualitative, the

researcher was able to explore certain behaviours and obtain a deeper understanding and explanation of that behaviour. Opinions were sought on why the academics behaved the way they did, how they attribute sense to those lived experiences and an attempt was made to contextualise the behaviour under study.

Qualitative research methodologies are appropriate for research problems in which the variables are unknown and need further exploring. The qualitative method entails the collection of data from the in-depth interviews, and the open-ended questions in the survey and interviews. The views and experiences of the participants are considered as 'more contextual, rich and detailed data'. As the researcher herself is the chief data collection instrument, the data could be collected in a number of ways by mainly through words, pictures, graphics and patterns.

The next section describes the data-generation plan with details on the online survey and semi-structured interviews.

4.4 Data generation plan

Using the mixed-methods design (Cohen, Manion & Morrrison, 2007; Cresswell, 2008; Cresswell, 2014;; HesseBiber, 2010; Plano Clark & Cresswell, 2008), the study data was gathered sequentially in two phases. Phase one was an online survey of all academics in the School of Education at the Edgewood campus, UKZN, to produce a combination of qualitative and quantitative data on the understanding of library spaces and research behaviour. Phase two involved semi-structured interviews with a purposive sample of seven selected academics with diversified experiences, as I was particularly interested in complexity or process of participants' insights into their research practices and skills and their use and preferences for library services (de Vos, 2010). Purpose in this context has a slightly different meaning from bias. Specific staff members were selected because they had reflected on a practice or method and were likely to have an opinion (Murray, 2008, p. 104).

An academic[17] is a permanent staff member of the university. In this case the study was conducted with senior lecturers, and/or researchers. According to the Academics Promotions Policy document (*UKZN, Division of Human Resources & Equity,* 2008*,* p. 3) at UKZN, these are the following categories of academic staff:

> "a lecturer is an academic with a Master's degree or appropriate professional qualification with clear evidence of a teaching and research portfolio; a senior lecturer is an academic with a doctoral degree or appropriate professional qualification also with clear evidence of a teaching and research portfolio; an Associate Professor (given the courtesy title of Professor) has a doctoral degree, academic leadership appropriate to this level and a portfolio of teaching and research; a Professor has a doctoral degree, academic leadership appropriate to this level and a portfolio of teaching and research, as well as having demonstrated a continuing record of excellent achievement, relative to the expectation of academics at this level, in the relevant discipline, in at least two of the areas of teaching, research, community engagement or university service".

The term faculty is normally used in the university environment, and in the US and Canada, it includes professors of several ranks: assistant professors, associate professors, and (full) professors, usually tenured in terms of their agreement of employment. For purposes of this study, academic staff members will be referred to as academics.

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[17] An academic staff member is a permanently employed instructional / research staff member as categorized by the Department of Higher Education and Training's Higher Education and Management Information System (HEMIS)

The study has been designed to utilise a mixture of survey methods including the use of questionnaires and interviews with semi-structured and open-ended questions, supplemented by document analysis as chosen methods of data collection with the intention of adding vigour, depth and breadth to the exploration, thereby securing in-depth consideration of the phenomenon being studied. This allowed the researcher to explore the full scope of the issues under examination. It allowed the generation of data that gave an impression of the overall landscape, taking a 'helicopter view' (Murray, 2008, p. 125).

The next phase allowed the researcher to refine the research, whereby findings were presented during the discussion to gauge respondents' views on them. These covered the research behaviour of the academics; their use of the physical library space; their use of the library as a virtual space; their thinking on the relationship between the physical and virtual library; their knowledge, awareness and training on library resources, print and electronic and what they envisioned that the future of the library space would be. This approach enabled complementary aspects of the picture to be generated, checked and rechecked. It allowed participant 'validation', where findings were presented back to those who provided the responses, to check that the researcher had understood what the interviewees intended. The utilisation of these complementary methods was meant to facilitate the accommodation of disparate views and opinions from the two subgroups that formed the main sample of participants for the study.

Jick (2008, p. 107) states that when "combining a variety of methods – qualitative and quantitative (to examine) the same phenomenon, that is triangulation. Triangulation captures a more complete, holistic and contextual portrayal of the units under study from multiple perspectives". He goes on to state that "the flaws in one method will be counter-balanced by the strength of the other and this will contribute to greater confidence in the generalisability of the results". The research process is summarized in the table that follows which shows the research participants and research instruments.

Table 4.1 Step-by-step mixed methods research process

Method	Source	Form
Survey of population	All academics in the School of Education, Edgewood Campus, UKZN	Survey questionnaire Quantitative data
Face-to-face Interviews	Seven academics	Transcripts of individual Interviews Qualitative data, textual information
Document analysis	University statistics and reports Library statistics and reports Research Office statistics and reports	Quantitative and Qualitative data

The research design in this study has two phases responding to the two critical questions: firstly what are academics' understandings of the library space and how are these spaces, collections, resources and services used or not used? Secondly, how can this be theorised? The online survey ascertained this information and, through a series of questions, some with options, shed light on their understanding of the space. The interviews further probed the academics' understanding and usage of library space and provided a commentary on the findings of the survey.

Phase 1: An online survey questionnaire for all academics in the School of Education, Edgewood campus, UKZN was designed.

Phase 2: Semi-structured interviews with seven academics in the School of Education, Edgewood campus, UKZN were undertaken.

4.4.1 Phase One: Online survey questionnaire

Fink (2009, p. 1) defines survey research as "information-collection methods used to describe, compare, or explain individual and societal knowledge, feelings, values, preferences and behavior". Designing and executing a survey is a systematic process of

collecting information on a specific topic by questioning individuals and then simplifying the results for presentation to the groups represented by the respondents. A survey question is a measuring scheme for things that are not directly evident. This method is commonly associated with quantitative research, but I employed it to produce a mixture of quantitative and qualitative data. Questionnaires provided an efficient method of collecting data from the whole population.

An online (or web-based) questionnaire was used, using the Lime Survey software. The questionnaire resided on a website and respondents accessed the survey by clicking on the hyperlink in their e-mail invitation. This provided convenient functionality for designing and administering questionnaires. This method was selected because the respondents had access to the appropriate technology, the Internet, e-mail and computers. The survey was conducted from Monday, 22 October 2012 until Friday, 23 November 2012. After publishing the questionnaire online, participation was solicited via an email where the aim of the study was explained and the participation of all academics at UKZN, Edgewood campus was requested. The email message contained the URL or link to the online survey. The participants were also offered the opportunity to receive the questionnaire in print as well. A series of emails inviting responses to the survey were sent to academics. The potential respondents were given a deadline for completing the survey. The online survey was active for five weeks through the online survey web site.

The research instrument contained 36 items, with a scale, nominal and ordinal levels of measurement. All items in the survey questionnaire were measured with rating scales. Rating scales offer respondents the opportunity to select a response from among several possibilities arranged in hierarchical order. Nominal or categorical scales required participants to describe their attributes and categories or to confirm the group they belong to, like gender. Ordinal scales required participants to provide response options in order of importance from the most to the least important. The Likert scale, after, was used in which participants were requested to indicate how closely they are in agreement or disagreement with a statement, with typically four and five points.   For the frequency of use, the verbal

frequency scale was used which provided a meaningful measure (Cohen, Manion & Morrrison, 2007).

The survey had seven parts to it. Part one, with five questions, requested demographic information about the respondent's gender, age, current position or university rank, division, time spent on research, teaching, administration and other areas of research. Part two, consisted of nine questions, solicited information about the respondent's research behaviour and included questions about where respondents worked: in the library, office or home for the following tasks: research, printing and photocopying, interlibrary loan, consultation, reading and writing, preparing teaching material and administration. It also probed their primary and secondary sources of research information, which information sources were used for research, which information providers were currently used, which Web 2.0 tools were used, their publication history, in terms of the type of publications, and whether their publications were sole or joint. Part three, consisted of four questions, which requested information on their research approach, whether respondents research alone or as part of a team, how often, and if they supervised research conducted by others. Part four, had four questions on the library as a physical space, probing their frequency of usage, and how they find information in print. Part five, had six questions on library as a virtual space, soliciting information on their access points, percentage of sources that were used in print and online, how respondents found information electronically, their search methods for these electronic resources and final question in this part was which was most effective – print or online. Part seven, had seven questions on the services and resources in the library. This part probed their responses on their awareness, usage and knowledge of services and resources, the importance of the physical resources and services and how they would find something that is not available in the library. The final part eight, had two questions on their vision for the library space.

The majority of the questions were multiple-choice, but five open-ended questions requested a written response. (The survey is reproduced in the Appendix 1). The questionnaire was designed to obtain similar information for physical and virtual library

provision, and specifically to seek open-ended comments and tick-box answers. Mandatory questions were also included in the survey, so that the respondents could not progress to the next question, if a response had not been provided to the previous one. These mandatory and compulsory questions had to be responded to before the final submission.

The closed-ended questions provided a list of suitable responses with checklists, multiple choice questions, and attitude scales. Respondents may have found it easier to answer the question when pre-defined responses were provided, and these responses to the closed-ended questions were also easier and less time-consuming to interpret and analyse. For the open-ended questions, respondents were allowed to respond in their own words. This provided them with the chance to use their own words to express themselves and possibly increased time to reflect on their answers. The survey instrument for the pilot study was a printed questionnaire and web-based for the main instrument. The design of the questionnaire was an important element in both the printed and web-based to ensure that maximum responses were received and non-responses were limited and prevent measurement inaccuracies.

4.4.1.1 Sampling

Purposive sampling techniques were employed with the research participants to ensure that they were suitable to achieve the purpose of the research. Academics were therefore selected because of their relevant knowledge, interest and experience in relation to the case. Academics were selected based on their ability to contribute to the understanding of the phenomenon under study namely, library spaces. At the time data was collected there were 95 academics, ranging from junior to most senior academics in this School at Edgewood campus and all of them formed part of the survey population. At the time of data collection, 85 academics were present with 10 others being on sabbatical leave, disability leave, at conferences or out of the office. In total 85 questionnaires were dispatched and 52 were completed but only 45 responses were useable. 7 respondents had missing data from unanswered questions within the survey or failed to complete any part of

the survey at all. This may have occurred because the respondent did not click the submit button, or they did not want to answer, they missed the question or may have been unsure of how to respond (completely fill in the boxes) or had incomplete responses. Therefore the 45 completed responses will be used representing a 61.1 per cent response rate. Thirty three (38.8 per cent) of the academics chose not to complete the survey, by deleting it without reading it at all.

For the interviews, the researcher selected a purposive sample of 7 academics who were largely representative of the 85 academics library space users at UKZN. The factors considered in selecting interviewees include gender, discipline, research productivity and rank. As such, the interviews complemented the online survey by providing information that the survey could not possibly produce. Together, these two approaches supplied an authoritative mixture of qualitative and quantitative data about the use of spaces in academic libraries.

The next section describes the response rate and the non-response of some research participants.

4.4.1.2 Response rate and Non-Respondents

The credibility and reliability of the data is an important element in survey research, therefore it is essential to receive a sufficiently high response rate. When the target population is small and easily contactable, it is often achievable to survey the entire population. Denscombe (2010, p. 47) reports that response rates increase if the 'respondent burden' is low, that is, the effort required by the respondent to answer a question. The survey response rate (61.1 per cent) was medium. There is a suggestion that there is bias in survey results but this is impossible to predict. The possibility of non-response bias exists for all survey instruments, and in general, the lower the response rate, the greater the possibility of bias. There will always be certain categories of individuals that are more likely

not to respond or to refuse to respond and researchers have to keep this in mind when working with survey data. Apathetic participants are often thought to be least likely to respond (Osborne & Overbay, 2004).

This is the challenge of online questionnaires – respondents have the option to delete, because of the anonymity of the survey. Web surveys eradicate the need for data capture, but the requirement to verify accuracy and account for missing data is still a crucial phase. Non-respondents or outliers may be responsible for the non-responses or missing data and this has to be considered in the design but these outliers are not usually the standard participants (Osborne & Overbay, 2004). But from the responses to the open-ended questions and the consistency in responses, this did not seem to be the case. Outliers can arise from errors in the data, errors with recording responses or those errors that arise from the inherent variation in the data. Non-respondents may, for instance, leave a single item on the questionnaire blank, or respond to some questions by saying, "I do not know," while providing a usable response to other questions, and then there are those respondents that will choose not to answer some questions. Therefore, the most important responses were marked as mandatory and respondents could not progress if they did not answer the question. But to further ensure the accuracy of responses, the interview data validated the survey responses and with the semiotic analysis, the researcher was able to ensure that this happened.

Sue and Ritter, (2012, p. 48) stated that:

> "in particular, survey data with missing responses can frequently be examined using methods from the statistical and econometric literature under the heading, 'measurement error.' Terms such as 'non-completion bias' or 'volunteer bias,' refer to the non-representative sample problem when only certain respondents in fact 'complete' the survey questionnaire, or in situations where the different categories of respondents is substantively different from the rest of the

population, and these should be viewed as in effect the same

as non-response bias".

Thus, 'selection bias,' is similar to when survey respondents choose not complete a question in the survey and in this way deliberating 'selecting' their responses out of the sample which can also be regarded as 'non-response bias' (Sue & Ritter, 2012). Sue and Ritter (2012, p. 48) suggest that: "one possible approach to dealing with missing survey responses is to somehow complete the missing values, capturing good guesses in place of missing survey data entries". Some researchers, choose to replace missing measurements with the average value across the completed responses. Sue and Ritter (2012, p. 48) suggest that:

" a more refined approach is to replace the missing values

with estimates based on 'prediction equations' that are close-

fitting with the complete responses and can subsequently be

used to predict missing values. After imputing data to

complete the missing data, data analysis proceeds using

traditional estimation techniques".

They also (Sue & Ritter, 2012, p. 48**)** point out that the common approach to dealing with such non-response is to reject responses that are incomplete, and award the same weight to the complete sample units. This technique was used in this study, therefore the sample was 45, non-responses were left out altogether. But this 'missing data' was backed up by the data from the interview questions (Sue & Ritter, 2012). To ensure that respondents did not submit multiple questionnaires, a cookie was placed on the respondents' computer when the first response is received and the respondent was prevented from retaking the survey. This was possible because each academic had individual Internet Protocol (IP) addresses on campus.

Gunn (2002, p. 98) states that "a response rate of 50 per cent, is considered low, though is not unusual for online surveys. Online or web-based survey ''response rates were between

20.5 and 21 per cent''. The study by Gunn on web-based surveys claimed that web surveys have a lower response rate than printed mail surveys 'and failure to complete a questionnaire or abandon it midway or altogether is a major concern with online web-based surveys" (p.98). He cited several reasons for the low response rates of web-survey formats, there is a lack of awareness amongst participants, features to complete responses are difficult to use like tables, tick-boxes, pull down menus, radio buttons and there are vague instructions on how to proceed, and some participants may be using different Web browsers and the survey may present differently and finally, inadequate access to computers. The non-response may also suggest a lack of familiarity with web technology, which can be seen with their use of library technology, discussed further in chapter six.

4.4.1.3 Piloting the study

This section discusses how the survey questionnaire was piloted and the benefits extended. A pilot test has several purposes, but mainly to increase the reliability, validity and practicability of the questionnaire (Cohen, Manion & Morrison, 2008). To test the questionnaire, the survey questionnaire was pilot-tested on a group of 20 contract academics in the Discipline of Education Studies in the School of Education and 13 responded, a 65 per cent response. The questionnaire was sent by email. Informed consent letters were sent in advance and they were given two weeks to complete in August 2012.

Cresswell (2008, p. 390) defines a pilot test as: "procedure in which a researcher makes changes in an instrument based on feedback from a small number of individuals who complete and evaluate the instrument". The aim of the pilot study was to check the clarity and adequacy of the research instruments, to eliminate the ambiguities or difficulties in the wording, especially avoiding the use of library jargon, to assess the length of the questionnaire and length of time required to complete the questionnaire and finally to assess the responses to the open-ended questions and decide if these could be asked as closed-ended questions. The rigor employed assisted in generating information that would help to answer the critical research questions. The participants were specifically asked to

check whether the instructions were clear or not. If any of the questions were unclear or ambiguous and if they objected to answering any questions this was attended to by rephrasing the questions.   Thereafter there was the opportunity provided to offer comments freely on the questionnaire.

The participants provided written feedback about the questionnaire and the proper functioning of the technical elements of the survey.   Of the five open-ended questions, three were re-worded following the pilot study because the participants did not understand them.   This led to some minor modifications to the survey instrument based on the feedback. As the contract staff provided responses to the questionnaire, they were left out from the final sample of the study.

As the respondents to the pilot study were contract staff, their current positions were tutor, junior lecturer and lecturer and the majority of the respondents (5 or 38.5 per cent) were in the age group 30 to 39. All 13 respondents spent more time on teaching than research. The findings of the pilot study revealed that the most used space for sources of research was the library (46.4 per cent), followed by 3 or 23 per cent using their offices and homes.   This suggests that most contract staff were not allocated offices and therefore do most of their research in the library.   The respondents also did not supervise research but conducted research as part of a team or alone. Of the 13 respondents, 8 indicated that they are busy with their postgraduate studies. The publication history questions were not completed suggesting that these respondents are not at the stage of publishing in their careers and are more focused on their postgraduate studies. Four or 30.7 per cent frequent the Edgewood Library on a daily basis.

Table 4.1: Usefulness of print-based resources

Item	Very useful	Useful	Neutral	Not useful
Books in print	69.2%	12.3%	0	0
Current issues of journals in print	38.4%	23.0%	23.0%	0
Short/restricted loan collections in print	38.4%	38.4%	0	0
Library catalogues in print	23.0%	30.7%	23.0%	0
Special collections in print	23.0%	38.4%	7.6%	0
Reference-only collections in print	23.0%	30.7%	0	12.3%
Subject-specific abstracting and indexing databases in print.	12.3%	30.7%	12.3%	0
Back issues of journals in print	12.3%	30.7%	12.3%	7.6%
Non-peer reviewed materials in print (e.g. trade/professional publications, newspapers, working papers)	12.3%	12.3%	30.7%	0
Archives in print or manuscript	12.3%	23.0%	23.0%	7.6%
Print-based resources of other libraries	12.3%	12.3%	30.7%	0
General abstracting and indexing databases in print	7.6%	30.7%	12.3%	0
Citation databases in print	7.6%	46.1%	12.3%	7.6%

The responses to the questions of the physical space showed that books in print (69.2 per cent), current issues of journals (38.4 per cent) and publications in the short-loan collection were found to be most useful.

Table 4.3 indicates the electronic resources that were most useful to the respondents.

Table 4.2: Usefulness of electronic resources (Question D4

Item	Very useful	Useful	Neutral	Not useful
Subject specific portals	7.6%	53.8%	23.0%	0
Institutional Repository (ResearchSpace) for disseminating your work	7.6%	30.7%	23.0%	0
Institutional repositories for e-journal publishing	7.6%	23.0%	23.0%	7.6%
General abstracting and indexing databases, e.g. ERIC	30.7%	46.1%	0	0
Back issues of electronic journals	30.7%	23.0%	7.6%	0
Subject-specific abstracting and indexing databases e.g. ScienceDirect	38.4%	38.4%	0	7.6%
Library website	46.1%	30.7%	7.6%	0
Library catalogues	46.1%	38.4%	0	0
Electronic books	46.1%	7.6%	12.3%	12.3%
Current issues of electronic journals	46.1%	30.7%	7.6%	0
Google or Google Scholar	92.3%	7.6%	0	0

The responses to the questions on electronic resources showed that the information resources found very useful for their Research were the electronic resources, the search engine like Google and Google Scholar (92.3 per cent), electronic journals (46.1 per cent), electronic databases (46.1 per cent), full-text resources (46.1 per cent), library catalogue (46.1 per cent) and library website (46.1 per cent) were found to be very useful. For the services and resources offered by the library, responses suggest that academic reserves or the short loan collection is used and this may be so because the prescribed and recommended publications are kept in that collection.

Table 3.4: Usage of library services and resources

Services and Resources	Yes	No	Not sure
Academic Reserves (Short loan collection)	76.9%	23.0%	0
Interlibrary Loans	76.9%	12.3%	0
Subject Librarians	69.2%	30.7%	0
Training students to use the library	23.0%	61.5%	12.3%
Photocopying/Printing/Scanning	61.5%	23.0%	7.6%
Ordering books and journals	53.8%	38.4%	7.6%
Institutional Repository	12.3%	61.5%	30.7%

Interlibrary loans (76.9 per cent) is also used indicating that respondents required publications not available in the Edgewood Library. This service will be discussed in chapter Six.

The next section discusses the second method used in the research, the interviews.

4.4.2 Phase Two: Semi-structured interviews

To meet the second objective, individual interviews were done that would support and add depth to the quantitative outcomes of the survey. The purpose of using interviews is to gain a thorough portrait of participant's beliefs, or observations about a particular topic (de Vos *et al.,* 2010). Interviewing has been a popular method in qualitative research (Cohen, Manion and Morrison, 2000; Henning, Rensburg & Smit, 2004) and is often used in case

studies. A qualitative interview involves the researcher asking participants broad, open-ended questions and capturing their answers. The response is elucidative, rather than providing a choice of pre-conceived categories. Participants express their views and describe their experiences unimpeded by any viewpoints of the researcher or past research findings. Qualitative interviews are a way of unearthing and exploring the meanings that underpin people's lives, routines, feelings, and behaviour (Arskey & Knight, 1999, Cresswell, 2008 and De Vos, *et al.*, 2010).

The research aim and hypotheses were formulated into a list of five themes that then became the interviewer's prompt sheet with a set of pre-set questions, with sub-points for follow-up questions, as needed. This allowed the researcher to pursue lines of enquiry stimulated by the interview which allowed for new insights, deeper probing and clarification. Thus the responses received from one interview were assimilated into interviews done thereafter and explored until there was adequate and sufficient responses and no new information was forthcoming. Interviewees also talked about issues important to them, which appeared to be 'deviations'. However, underlying this approach was the recognition, that, although the researcher had some idea of the range of issues, not all issues were known, and were thus reliant on the interviewees for enlightenment on the complexities and reasons behind their thoughts and behaviour.

The last question in the survey asked respondents if they would be willing to be interviewed. At the start of the interview, each participant completed an informed consent form addressing their willingness to voluntarily participate in the interview. The interviewer began by providing a short introduction outlining the research project, purpose and objectives of the interview, the Interview Guideline (see Appendix 2).

Participants were informed at the start of the interviews that there responses would be recorded on a Dictaphone and if they were not agreeable then this method would not be employed. Participants were assured that these recordings would be confidential and their

anonymity would be maintained. The researcher labelled the notes and electronic files with an identifying number which was only retained by the researcher. Individual responses were identified by the numbers, for example AS1, and this was done during the data analysis and transcripts were done of all the recorded data. The interview data was organised according to responses to the questions and tabulated so that analysis was made simple as a comparison was done with the quantitative data from the online survey and the qualitative data from the interviews. With the consent of the respondents, all interviews were recorded and detailed note-taking was done to ensure that the maximum data was acquired. Each interview was transcribed and analysed.

Interviews were conducted in the academics offices between July and August 2013. The interviews lasted between 45 to 90 minutes duration, with the majority taking about 60 minutes. These interviews formed the primary basis for the case studies. To avoid inconvenience and awkwardness around the issue, the themes/categories per se were not divulged to the academics. This created a richer picture and the inquiry was more exciting because each approach yields different data types which are part of the whole. Furthermore, these types of inquiry (quantitative and qualitative) can be cyclical, with feedback loops built into the research design and research procedures.

The interview questions were developed around information on their research behaviour, information-seeking skills for print and electronic information, their use and awareness of information technology. An Interview Guideline was designed to systematically collect data (see Appendix 2). The Interview Guideline consisted of a series of twenty-two questions with the intention of guiding the interview process. The interview probed their research behaviour, usage of library resources, physical and virtual, use and value of their faculty spaces, awareness, knowledge and skills of library resources and their vision for the future of the library space.

The next section discusses and justifies document analysis as another data generation method used in the study.

4.4.3 Document reviews

Document analysis is a convenient place to start data collection in a case study. Documents constitute public and private records that qualitative researchers obtain about a site or participants in a study and these will help the researcher understand the central phenomena. The documents were ready for analysis without the necessary transcription that is required with some observational or interview data (Cresswell, 2008, p.231). Document analysis from both primary and secondary sources was used to generate qualitative data. This was used to theorise the study and for background information.

The primary sources that were used were reviews of Library circulation statistics and online usage data, that is, subscribed electronic databases, e-journals and e-books were analysed. Minutes of UKZN Library meetings between 2011 and 2014 were used. Library Annual reports and reviews contained valuable data on the budget and collections of the Libraries. Other primary sources such as publication output, conference output, citation impact, grant proposals of academics in the School of Education and the university were obtained from the Research Office to predict faculty productivity and to get a sense of the case. The Research Office (2012, p. 3) has an Information Management and Marketing unit that is "responsible for ensuring an effective research data management system, the provision of reliable and accurate statistics on research output, the production of research reports and news internally as well as to the external community". The Research Office also produces annual reports and reviews of research productivity at the university and these were examined for the period 2007 to 2014. The secondary sources that were used were a number of reports on research productivity that the DoE and the DHET produced of HEIs. These reports were invaluable for the study.

The data from all the existing sources that were utilised during the research process were incorporated and gathered, to conclude the data collection stage. This is in line with Mouton, (2001, p. 104), when he contends that "data from all sources that were used during research process should be combined and collated to complete the data collection stage". Document reviews have advantages and disadvantages. Some of the advantages are that documents encourage the skill and creativity on the part of the researcher (Robson, 2002). The drawbacks of the document reviews are that documents are 'quiet' and they may not give the researcher the exact interpretation of what the researcher is seeking (de Vos *et al.*, 2010).

4.5 Data analysis

Data analysis is a process of bringing order, structure and meaning to the quantity of collected data (de Vos *et al.*, 2010; and Henning, *et al.,* 2010; Maree, 2016). It is also a chaotic, indefinite, time-consuming, and creative process that captures your attention and does not proceed in a linear fashion but in a cyclical manner (de Vos *et al.*, 2010).   In this section, I describe the data analysis process and methods employed. Cresswell (2008, p. 10) described data analysis and interpretation as "drawing conclusions about it, representing it in tables, figures and pictures to summarise it, and explaining the conclusions in words to provide answers to your research questions". As an interpretive study, inductive thematic analysis was employed with the intention of reporting participants understanding of themes generated from the data. Data analysis involves searching for patterns, themes and holistic features. "Results of such research are likely to be context-specific and reporting takes the form of a narrative with contextual description and direct quotations from researchers. Detailed and specific information can be gained through use of this method" (Gaur, 2006, p. 19).

The qualitative data made up of the interview responses and the documentary reviews. The interview responses were transcribed and analysed. Detailed notes were taken during all interviews. The data was recorded in a systematic manner that was appropriate to the

university setting. With the permission of the respondents, all interviews were recorded and detailed written notes were done. These recordings were then transcribed.

Reliability was determined using the Cronbach's alpha statistic. Cronbach's alpha is the most common measurement of internal consistency, frequently referred to simply as the alpha coefficient of reliability. The Cronbach alpha provides a coefficient of interitim relationships. It is a measure of the internal consistency amongst the items and is used for multi-item scales. It is most frequently used when you have multiple Likert questions in a survey questionnaire that form a scale and you wish to determine if the scale is reliable or not.

According to Cohen, Manion and Morrison (2011, p. 639): "the two most important aspects of precision are reliability and validity. Reliability is computed by taking several measurements of the same subjects. A reliability coefficient of 0.70 or higher is considered as acceptable". In my research, the value of Cronbach's alpha for section B is 0.747, section D is 0.880, section E is 0.918, section F is 0.910 and section G is 0.434. The overall figure is a total of the figures in the section. All the values of Cronbach's alpha that were greater than 0.7 demonstrated acceptable validity and reliability for all constructs used in this study.

The table below reflects the Cronbach's alpha score for all the items that constituted the questionnaire.

Table 4.5: Cronbach alpha scores for online survey questionnaire

Section		Subsection	Cronbach's Alpha
B	What is your most used (primary) and next most used (secondary) spaces for sources of research information: at home, in my office, elsewhere in the School, in the Edgewood Library, in other UKZN campus libraries, in the local and other public library.	B2	.580
	Which of the following types of information sources do you currently use in your research?	B3	.701
	Information sources for research can be obtained from many providers, either in person or electronically, which do you currently use?	B4	.640
	Do you use of the following Web 2.0 tools>	B5	.588
		Overall	**.747**
D	How do you find Information in print?	D3	.880
		Overall	**.880**
E	How do you find Information electronically?	E3	.890
	How important is each of the following search methods for finding electronic sources	E4	.835
		Overall	**.918**
F	Are you aware of the following services and resources in the library?	F1	.855
	Do you use the following services and resources in the library?	F2	.636
	How important are the following physical resources provided by the library for successful research engagement?	F3	.821
	How important are the following services provided by the library for your research?	F4	.884
	To what extent do you agree or disagree with the Library focus?	F5	.480
		Overall	**.910**
G	How do envisage your use of these changes over the next three years?	G1	.434
		Overall	**.434**

All of the sections besides G have Cronbach's alpha values that are more than the minimum suggested value. This indicates an acceptable level of scoring, consistent for the different categories for this research. This may also suggest that to prevent personal bias, the instrument had proven value and reliable and valid scores.

However, within these, certain sub-sections and section G had below average reliability values. The main reasons for this are as follows: the construct is newly developed and is based on an amalgamation of research from various other literature sources, some of the sections only had the minimum number of items required to obtain valid reliability scores.

When items are used to form a scale it is essential that there is internal consistency, a correlation with one another and all should measure the same thing. A useful coefficient for assessing internal consistency is Cronbach's alpha. Cohen, Manion and Morrison (2011, p. 640) elaborate on the "formula which is where k is the number of items, s_i^2 is the variance of the ith item and s_T^2 is the variance of the total score formed by summing all the items. If the items are not simply added to make the score, but first multiplied by weighting coefficients, we multiply the item by its coefficient before calculating the variance s_i^2. Clearly, we must have at least two items-that is $k > 1$, or α will be undefined".

They (Cohen, Manion & Morrison, 2011, p. 640) further claim that:

> the coefficient works because the variance of the sum of a group of independent variables is the sum of their variances. If the variables are positively correlated, the variance of the sum will be increased. If the items making up the score are all identical and so perfectly correlated, all the si2 will be equal and sT2 = k2 si2, so that Σsi2/sT2 = 1/k and α = 1. On the other hand, if the items are all independent, then sT2 = Σsi2 and α = 0. Thus α will be 1 if the items are all the same and 0 if none is related to another.

Data recording protocols were used to record information during the interviews of the academics. The interviews were audio recorded, and each recorded interview was

transcribed, cleaned, summarized, and tagged as part of data management and preparation. This data was recorded in Microsoft Word and the content was analysed. Backup copies were made of all data, that is, interview transcripts, and observation notes. Copies will be stored in a secure, password-protected, file.

Descriptive statistics indicated the general tendencies and simple summaries about the sample and their responses. The statistics included the frequency allocations (numbers and percentages) measures of central tendency (the mean, median, and the mode) and measures of variation (range and standard deviation) (Fink, 2009). The standard deviation is a statistical term based on a score's distance from the mean; it is the average distance, the average score from the mean. If all the observations are the same, the standard deviation equals zero. The more spread out the observations are, the larger the standard deviation. To examine how the variables interact with one another, inferences are made. The inferential statistics are presented in the discussion. The responses were also evaluated using the chi-square which is a test that is used with categorical data. It tests the hypothesis that survey data expressed as proportions are equal. It is used in situations where the researcher wants to examine the relationship between two nominal variables (Maree, 2016, p. 275).

Qualitative data analysis consists of describing the information and developing themes and categories. Cresswell (2008, p. 36) describes

> "content analysis as a method of analyzing qualitative data for the purpose of drawing inferences about the meaning of recorded information such as the open-ended responses and comments made by the survey and interview respondents".

Organising and managing the data is an essential part of data analysis. Codes are units that speak to the statistical software and is the formal representation of analytical thinking.

After generating themes, a coding scheme was applied to those categories and themes. These codes highlighted the different themes and foci within the data. This began with themes around which there is resounding consensus, or those themes which, whilst mentioned by all interviewees, contain divergent views. These are seen as 'primary' themes, then the secondary and tertiary themes are reported in Chapter Five and Six. The discussion of the themes allowed the researcher to integrate an analysis of the survey, interview data and document analysis.

Part of this phase is appraising the data for their utility and centrality. This was done by determining how useful the data were in shedding light on the questions being explored and how fundamental they are to the layer that is unfolding about the social phenomenon being considered. As a researcher in the interpretative paradigm, I was careful about facilitating and not directing the analysis and interpretation process as I was keen to understand the phenomenon under study through the eyes of the participants.

Authenticity refers to the presentation of a view of all perspectives, values and beliefs (Mertens, 1998). Authenticity in research answers questions like, Has the researcher been fair in presenting views? (Mertens, 1998). Therefore, in this study fairness in the presentation of views will be ensured through the use of various methods of collecting data. Babbie and Mouton (2004) argue that a quantitative study cannot be considered valid unless it is reliable, a qualitative study cannot be deemed credible unless it is dependable. The crucial means of checking credibility and accuracy of research findings in this study will be done by comparing findings with those findings of the same themes produced using different research approaches. This is in line with Denscombe (2010) as he argued that the aspect of credibility and accuracy of research findings need to be compared with the findings of the similar research area produced using different research methods produced by other researchers or based on other theories. This process of checking credibility is called triangulation (Arskey & Knight, 1999; Lodico, 2010). Triangulation provides social researchers with a means of determining the quality of data by arriving at the same thing or

conclusion from a different angle (Denscombe, 2010, p 147; Arskey & Knight, 1999; Lodico, 2010).

4.5.1 Validity and reliability of the study

Researchers need to feel as confident as is reasonably possible that data collected is an accurate reflection of some underlying 'truth' (Denscombe, 2010, p. 11). There are various criteria for judging quality in qualitative research (Mertens, 1998; Denscombe, 2010; Guba & Lincoln, 1989). In this study I will look at the following criteria in judging quality of data to be collected: authenticity, trustworthiness and credibility. In this study validity and reliability of research cannot be overlooked. Reliability and validity are two important features of any measurement procedure. Validity in research asserts that the particular instrument used measures what it purports to measure (Arskey & Knight, 1999; Check & Schutt, 2012; Denscombe, 2010). Validity allows the researcher to make assertions that what was selected as the focus or phenomenon to be studied, was actually studied. It is concerned with the accuracy of the questions asked, the data collected and explanations offered (Mertens, 2008; and Denscombe, 2010). In this study multiple data collection methods will be used in order to increase validity and reliability of the research findings. According to Denscombe (2010, p. 144):

> "reliability concerns the replicability of the findings. It allows for claims that, if similar research process were to be followed by another researcher or at a different time similar findings could be expected. Reliability refers to the confidence we can place on the measuring instrument to give us the same numeric value when the measurement is repeated on the same subject. Reliability relates to the methods of data collection and the concern that they should be consistent and not distort the findings".

Generally reliability entails an evaluation of the methods and techniques used to collect data (Denscombe, 2010). Cohen, Manion and Morrison (2007), argue that one way of controlling reliability is to have a structured interview, with the same format and sequence of questions for each participant. In this study semi-structured interviews will be used as one way of ensuring reliability. Reliability, is also referred to as internal consistency, and it measures the degree to which a set of items consistently measures the same thing across respondents and institutional settings (Check & Schutt, 2012, p. 83).

For the survey results to be useful and meaningful, there must be reliability and validity in the questions asked. Reliability is the degree to which repeatedly measuring the similar thing produces the same result. Ideally, the interpretation of each survey question will have the same meanings for everyone, including those administering the survey. Validity is also the degree to which a survey question measures the things it is supposed to measure. Once the data was collected, the researcher had to ask 'what does this mean?" (Cohen, Manion & Morrison, 2007) Interpretation is achieved through data analysis, a highly inspired and intellectual process where the data is worked and patterns of meaning are found.

Once the questionnaire data was coded, it was entered into the computer statistical programme. Statistical Package for the Social Sciences (SPSS) version 20.0 was used to analyse the quantitative data generated. Tables and other descriptive statistics like frequencies of response were generated and used in the analysis process. The quantitative data (from the multiple-choice questions) were exported to SPSS for analysis. The qualitative data (from the narrative-response questions) were collected in a Microsoft Word document and content was analysed by the researcher. The content analysis revealed the themes that emerged from the participants' narrative responses.

The analysis is framed in 3 parts: The first section: Part A: who are the academic users – the profile of the academic researcher? This section investigates the human constituents of the university library and offers describing features of the researcher.

The second section: What is the library? This examines the dimensions of the library – physical and virtual.

The final section: what is the vision or the future of the university library? This addresses the participants' views of the future of the library. This is the theorising moment which responds to the question of how can these understandings be theorised?

4.5.2 Semiotic analysis

Swiss linguist, Ferdinand de Saussure in his book *A Course in General Linguistics,* first published posthumously in 1915, advocates the possibility of semiotic analysis. It deals with many of the concepts that can be applied to signs. He wrote: "The linguistic sign unites not a thing and a name, but a concept and a sound-image. I call the mixture of a concept and a sound image a *sign,* but in current usage the term generally designates only a sound-image" (de Saussure, 1915, p. 66–67). "He divided the signs into two components, the signifier (or 'sound-image') and the signified or (concept'), and his suggestion that the relationship between signifier and signified is random were of critical importance for the development of semiotics".

A semiotic analysis was employed in this study to gauge meaning from the graphs and tables generated from the analysis of the questionnaire and conveyed to the interview respondents (Berger, 2004, p. 4). Graphs were presented for the questions on the research behaviour, in terms of what location, office, home or library was used the most for various academic tasks; their supervision of postgraduate students; frequency of their visits to the physical library; resources used for information; and library as a virtual space. Tables were presented for questions on frequency of visits to the physical library.

The latest ideas were used to further analyse the data from the questionnaire. For the interviews, the second round of data collection, the results were presented to the respondents in the form of tables and figures. The respondents were requested to comment on that data and contribute their understanding and experience as well. The responses to the interviews had two strains, their personal or individual opinions and commentaries on the data from the survey. When the academics looked at the graphs and tables, they located themselves within the figures, discussing their lived experiences and how they attributed sense to those experiences. In immersing themselves in the data, they were able to explain their interpretation of the questions and results.

4.5.3 Ethical issues

It is an accepted expectation that data collection should be ethical and that it should respect the rights of individuals. Therefore obtaining permission before data collection starts is not only part of the informed consent process but is also an ethical practice. The responsibility for the ethical conduct of research rests with the researcher, however, it has become increasingly common at institutions for researchers to gain formal approval from a research ethics committee before embarking on the research (Cresswell, 2014, p. 95) and in my case, as a student enrolled with UKZN, this approval was sought before the data collection could commence.

According to Henning, *et al.,* (2004), in order for the respondents to participate in the research, they are required to give informed consent first. This implies that the respondents must be fully informed about the research project in which the interview is going to be utilised. Informed consent is defined as "the procedures in which individuals choose whether to participate in an investigation after being informed of facts that would be likely to influence their decisions" (Cohen, Manion & Morrison 2011, p. 650). It is good research practice to let respondents know that their privacy and sensitivity will be protected and what happens to their recorded information after the research project is completed (Mertens, 2009; Henning *et al.,* 2010).

There is a concern by respondents of an online survey that their privacy will be compromised. As the email addresses were used to inform participants about and to provide a link to the survey, these were only made available to the researcher. A number of ethical issues were taken into account in this research area, as follows: confidentiality, anonymity and privacy were respected and guaranteed. In this thesis, the names of the subjects were changed to preserve their anonymity and this was conveyed to them and agreed to at the start of the interview. Informed consent of all participants was required. This information was provided in the e-mail invitation and as part of the introduction to the questionnaire whereby they had to tick a box to indicate their agreement to participate in the research, and information sheets were provided to the interview respondents on research aims, processes and use of data. Consent forms were provided for completion by the academics (see Appendix 4). The consent forms indicated their right to withdraw from the research at any point, and the data from that respondent was not to be used. Participants' privacy and sensitivity were protected and they were informed about what would happen with the information after recording.

A system of secure data storage was created for interview transcripts, questionnaire responses and documentary notes. By obtaining agreement and plainly communicating the purpose of the study before data is collected, the hesitation that some individuals may have had about participating may have been lessened.

4.5.4 The Position of the Researcher

The interpretive approach acknowledges subjectivity and that the research participants and researcher may bring their subjective influences to the research process during the data collection and interpretation. Both will respond to the background, characteristics and positioning of the other and will in ways contribute to the co-construction of the reality during the interview process (Hennink, Hutter & Bailey, 2011). To establish my

understanding regarding library spaces from the understandings of the research participants, a description of my position as a researcher is made here. The position of the researcher in research is crucial in influencing how one looks at a phenomenon under study. Henning (2004, p. 82) describes 'positionality', as he calls it, as a form of self-reflection and self-examination which allows the researchers to gain clarity from their own preconceptions.

As the Campus Librarian at the Library on the Edgewood campus, UKZN, I am both the researcher and a staff member on the campus. I worked as a subject librarian from 1989, and as a campus librarian from 2005. In all these spaces of work, I have found myself at the centre of efforts aimed at helping academics understand the debates, issues, and trends relating to the library and its purpose in meeting the core academic functions of Research, Teaching and Community Engagement at the university. Furthermore, my various spaces of work as a librarian have also informed my position in this study. I foregrounded my identity and role as researcher. My status and authority may have influenced the data, but I was sensitive to my status and minimised such influences by conscious self-reflection and constantly monitoring my engagement with the research and subjected it to critical inspection to improve the quality of the study. I was transparent about my position and the possible effects this may have on the responses of the participants. Reflexivity was therefore required to reflect on the potential influence of the researcher and conducted throughout all stages of the study. Reflexivity is needed in order to "legitimise, to validate and to question the research process" (Hennink, Hutter & Bailey 2011, p. 20).

4.6 Limitations of the study

One of the limitations of the study was the population of permanent academics in the School of Education, on the Edgewood campus, at UKZN. As this was a case study, it was limited to a single site and does not allow for the findings to be generalised to the entire population of academics using library spaces at other libraries, since the survey and interviews were influenced by the environment of the particular campus library and

institution, and by the physical attributes of its library. There are many inequities at the different campuses of UKZN, for example the Howard College and Westville campuses are larger in size and more advantaged and this has implications for the library service. Although it is a requirement for all academics at the University to conduct research and have a teaching workload, the study focussed on academics on the Edgewood campus.

The choice of an online survey could be viewed as a limitation of the study. Some of the survey respondents chose not to submit a response or left it blank. As Sue & Ritter, (2012, p. 48**)** point out, "the general approach to non-response is simply to reject incomplete responses". This technique was used in this study, therefore the sample was 45, non-responses were left out altogether. But this 'missing data' was compensated for by the data from the interview questions and the accuracy of the responses were ensured through the interview data and with the semiotic analysis.

The interpretive paradigm was used as a framework. An important element of this framework is that it looks at the perspectives of people and their lived experiences, how they interpret and observe their social world. These experiences operate within a "social, cultural, historical, professional and personal context" (Hennink, Hutter & Bailey, 2014, p. 15). As a result this is subjective and they can have multiple perspectives. An important consideration is that the researcher's may have had an influence on the how the data is collected and interpreted.   The interpretation of the quantitative data from the university documents is also subjective. This limitation was overcome by the sampling of the interview respondents and selecting all the academics in the School of Education, Edgewood for the survey which was representative of the whole population. Furthermore a small selection of interview participants enabled an in-depth qualitative inquiry into their research behaviour, perceptions or experiences.

4.7 Summary of the chapter

This chapter covers the research approach and design methodology, the plan for the data production, and the strategies used for the data analysis. The study used two design methods that were quantitative and qualitative in nature and is located within the interpretive paradigm using a mixed-methods design methodology. The study was iterative in nature whereby the analysis was done by repeating the processes to reach an understanding of the academics' use of physical and virtual library spaces.

The data production plan indicates that this study employed an online survey administered to 85 academics in the School of Education, Edgewood campus, UKZN to obtain an overall sense of their understanding and use of the library space. The semi-structured interviews with the purposive sample of seven academics tried to establish what their understanding and use of the library was and to comment on the findings of the online survey and to relate their experiences. The documentation review provided the background information to the study.

The strategies used for the data analysis was content analysis of the survey and interviews. This chapter outlined the research methodology and design and the following chapters will provide a profile of academics and how they engage with the personal, professional and societal spaces in the physical and virtual library spaces.

Chapter Five: Profile of the Academics

5.1 Introduction

The preceding chapter focused on the research design methodology. This chapter responds to the first critical question – Who are the academics using the library space – their personal, research (character development and personal talents) and academic with teaching (professional) (metacognition development and knowledge) profile or spaces. It further reviews and analyses the data collected and generated from the survey and interviews. What had to be ascertained is how these spaces will impact on or influence their usage of the library space. This was achieved through a presentation of the results and findings obtained from the online survey and interviews in this study. The data collected from the survey were analysed with SPSS version 20.0. Statistical data from the survey and qualitative data from the survey and interviews have been inserted selectively to illustrate a profile of the academics. The results are presented graphically by graphs, cross-tabulations and other figures.

This chapter is divided into three sections, Section A discusses the data from the survey questionnaire (Questions 1 to 5) on the Personal spaces of the academics – their personal and research profile in the School of Education, UKZN. It documents personal information such as age, gender, rank and positions of the 45 academics who completed the survey. Respondents also described their current positions and indicated how they spent their time between research, teaching and administration and what their area of research was. This section sought to establish exactly how much time academics devoted to self-development (personal space) teaching (professional space) and research (societal/social space) and whether their rank, age or gender influenced this. The purpose of the section was to understand exactly who the academics are and what they are doing in terms of research.

Section B discusses the data from the survey questionnaire (Questions 6 to 14) on the Professional spaces of the academics – their research behaviour.   Behaviour includes cognitive behaviour, needs, opinions, motives, knowledge. This section sought to establish exactly how academics use the library space and behave when undertaking their tasks. There are four different categories of Research behaviour discussed in this section. They are: Spatial use of Office, Home and Library; Information Sources to do Research; and Use of other Electronic Resources and Publications. Their personal and professional identity sometimes overlaps. The interviews interrogated these responses and questioned the nature of this usage. For the interviews, the demographic data was presented in graphs to the respondents and they were asked to comment on the statistical data and relate their personal experience and a semiotic analysis was done of their responses.

Section C of this chapter discusses the data from the survey questionnaire (Questions 15 to 18) on the Professional spaces of the academics (Questions 15 to 18) gathered data on the academics approach to research, whether they conducted research alone or as part of a team and their supervision of postgraduates and research. For the interviews, the research behaviour, use of information resources and publications were presented in graphs to the respondents and they were asked to comment on the statistical data and indicate if it correctly reflected the situation in the School and to indicate if this data reflected their position on the responses as well. The literature review and the research questions guided the design of the survey.

5.2   Personal spaces of the academics: Personal and Research profile

In this section, the personal and research profile of the academics will be discussed. A description of who they are, is determined by how and where they work. The biographical or personal data presents their age, gender and position or rank in the university. Their research identity describes the time they spend performing their main tasks of teaching, research and administration. The profile of the academics gives an indication of what their specific research behaviour is and what tasks they conduct in their offices, home and library and whether their rank, age, or discipline has a bearing on how they conduct this research

with the library resources and space. Their library use is closely related to their research identity. Their research behaviour indicates their choice of location that is used to perform their core tasks, what tasks are performed in these various spaces, namely, their offices, the library and their homes. In addition, whilst in those spaces, what information resources are they aware of and what resources are being used to do research.

5.2.1 Personal data of the Survey Respondents

In this section the biographical data of the academics from the survey and interviews will be presented, their age, gender and position or rank in the university. In the Table below the descriptive statistics of the biographical data (gender and age) of the academics are presented. The table illustrated that the highest proportion of respondents by gender and age were between the ages of 50 and 59.

Table 5.1: Biographical data of the academics

Age		Female Survey	Female Interview	Male Survey	Male Interview
			Gender		
30 – 39	Count	1	1	1	0
	% within Age	50.0%		50.0%	
	% within Gender	4.5%		4.3%	
40 - 49	Count	9	1	9	1
	% within Age	50.0%		50.0%	
	% within Gender	40.9%		39.1%	
50 - 59	Count	10	2	13	2
	% within Age	43.5%		56.5%	
	% within Gender	45.5%		56.5%	
60 and over	Count	2	0	0	0
	% within Age	100.0%		0.0%	
	% within Gender	9.1%		0.0%	
Total		Count	4	23	3
		% within Age		51.1%	
		% within Gender		100.0%	

The academics were divided into four age cohorts: 30-39, 40–49, 50–59, and 60 and over. A 10-year age span is represented in each cohort. The normal retirement age for academics at the university is 60 years. The data reflects that there were two academics that were 60 over, possibly extending their appointments through an honorary position. *(Division of Human Resources & Equity, 2008)*.

From the survey data, males make up 23 (51.1 per cent) of the 45 respondents and 48.9 per cent are female, making the difference minimal. These figures match the UKZN staffing

patterns and there are 1,541 academics at the university. According to university's statistics (*Data Management Information, 2014)* 53 per cent of academics are male, resulting in a gender ratio of 1 : 1.12 females to each male. But within the School of Education, 59 per cent or 74 of them are female and 40 per cent or 50 of them are male. The School's figure differs slightly from the university but is close to the national level of 51.2 per cent of academics are female (Govinder, Zondo, & Makgoba, 2013, p. 6).

The majority of the respondents, both female and male were between the ages of 50 and 59, indicating an ageing population. The survey done by the *Council on Higher Education* (2009, p. 57) on the 'State of Education' stated that academics are ageing, and in particular the most active researchers. The report states that:

> At the traditional universities, much of the research is produced by authors over the age of 50. Between 38% and 65% of the research output at these institutions is attributed to authors over the age of 50. In comparison in that time period (2009), at UKZN, 83% of their research was produced by authors/academics over the age of 50.

The survey report seems to suggest that there are no succession plans in place in these institutions to address this challenge.

The survey data revealed that the next cohort was followed by 40 per cent in the age group 40 to 49. Only 2 (4 per cent) of the respondents were between the ages of 30 and 39 and 2 (4 per cent) were 60 years and over. For the entire sample, the majority of the male respondents (56.5 per cent) and the majority of the female respondents (43.5 per cent) were in the 50 to 59 age group. As stated above, this seems to be symptomatic of the entire university population (*Data Management Information, 2*012). The Data Management Information (DMI) office of UKZN has a corresponding full record of each staff member's publication record, their gender, race, age, academic qualification, College and School of employment and the level of post to which they have been appointed. The demographic data above is useful in that the sample composition is mature, implying a fair degree of

experience in the field. This implies that the responses from the academics should be informed from accumulated experience over a period of time.

Respondents had to indicate their current position at the university. The options available are according to the old system that the university used to categorise academic staff. This has since been revised with the restructuring of Schools and Colleges. DHET uses the same categories as those of the survey. The largest proportion of respondents were lecturers (26 or 57.85 per cent) followed by senior lecturers at 15.6 per cent or 7 of them. Only 8.9 per cent (4) of the respondents were Professors and 13.3 per cent (6) were Associate Professors. As the sample for the interviews were purposive, the academics were selected and 7 academics consisted of 2 Professors, 2 were Associate Professors, 2 were Senior Lecturers and 1 was a Lecturer. As table 5.2 indicates, the largest number of academics at the university and the School of Education are Lecturers, followed by Senior Lecturers.

Table 5.2: Positions or Rank Level of the academics

Rank Level	University Total	School of Education	Survey Respondents	Interview Participants
Professor	157	4	4	1
Associate Professor	154	14	6	2
Senior Lecturer	250	23	7	2
Lecturer	849	73	26	2
Junior Lecturer	27	2	1	0
Tutor	73	5	1	0
Other	31	3	0	0
Grand Total	1541	124	45	7

This finding is in line with the composition of the university staff as indicated by Table 5.2 which presents a breakdown of academics at the UKZN, the School of Education and respondents in the survey and participants in the interview.

To corroborate the data by the Council on Higher Education on ageing academics in South Africa, a cross- tabulation between the age, gender and position of the respondents was done, There is a Professor in each of the age groups 40 to 49 years, 50 to 59 and 60 years and above. The sample for the survey and interviews were thus representative of the academics in the university because the majority of the academics at the university are at the level of lecturer, as is in the School and found in the survey. This was followed by the next majority of respondents (23) at the level of senior lecturer. The study by Rupp-Serrano (2013, p. 134) found similar staffing compositions with a majority of the respondents being professors and in their positions for sixteen years and longer. The study looked at the information-seeking behaviour of academics in twenty public research universities in the US.

The chi-square results for the gender were 1.168, age was 8.329 and position was 5.600. Chi-square is a frequently used measure of significance. Chi-square test is a test of difference that can be conducted for one categorical variable and between two categorical variables. The chi-square test measures the variance between an expected result that is statistically generated against an actual result to realise if there is a difference statistically between them and if that difference is significant (Cohen *et al.*, 2011). If the chi square value is higher, then it is less probable that, that the value could be ascribed to sampling, as is the case for this cross-tabulation of the 3 variables of age, gender and position.

The final question regarding their biographical data asked respondents about their area of research. The choices were organised by the Disciplines or Clusters (as referred to in the School of Education). But the responses to this question indicated their areas of research (professional work) and not only their Cluster or Discipline in the School of Education.

Figure 5.1 presents the responses. The highest proportion of responses (33.3 per cent), were for the area Mathematics, Science and Technology, followed by 14.3 per cent from Education and Development and Language and Literature. The other responses were Education Development, Leadership and Management (9.5 per cent) Curriculum (4.8 per cent), Sporting Excellence, Gender, Drama and Teacher development and Higher Education (all were 2.4 per cent each). The responses were from a spread of all the Disciplines in the

School. The responses also indicate the School's multi-disciplinary and inter-disciplinary offerings of approximately 28 'sub-disciplines' and 50 programmes (KwaZulu-Natal, 2013). In the current School structure, there are 124 academics in the School of Education on the Edgewood, Howard College and Pietermaritzburg campuses and 27 are in the Mathematics and Computer Science Education, Science and Technology Education. They make up the highest percentage of the School staff, 21.7 per cent. The other Disciplines are smaller. The percentage of responses are in keeping with the percentages of academics in the School.

Figure 5.1: Areas of research
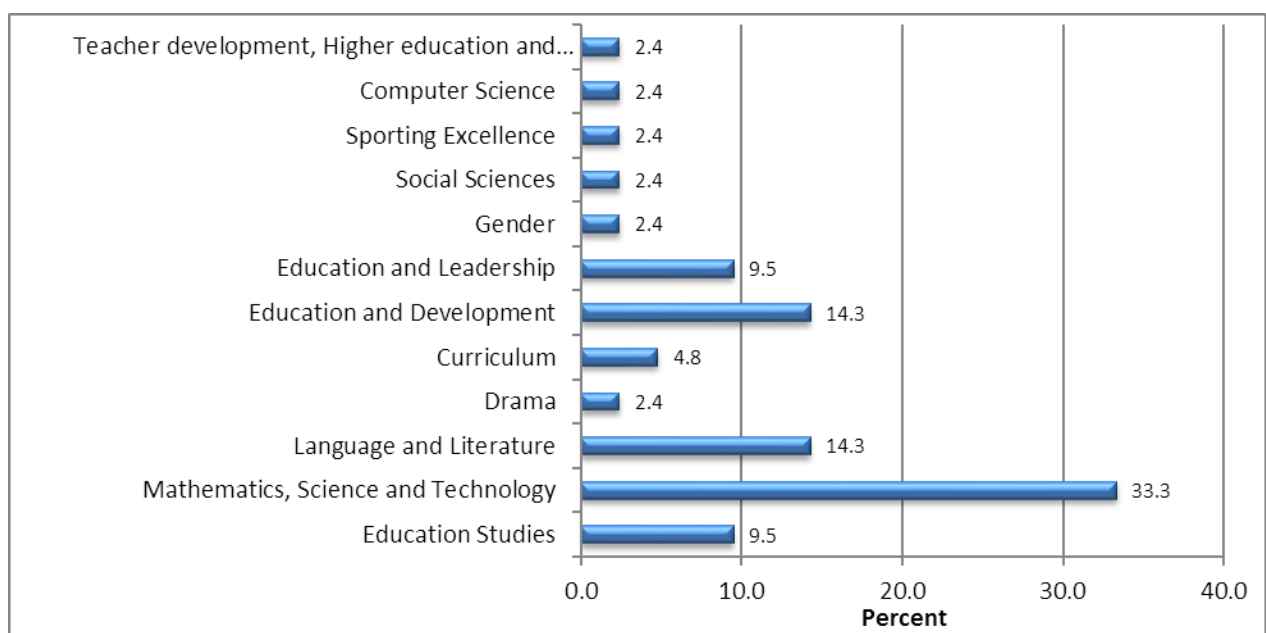
In terms of the current School structure, a number of these Disciplines have fallen into the new structure of 6 broad Disciplines.

Lea and Stierer (2011, p. 608) acknowledge that an "academic's sense of membership of, and allegiance to, their discipline and disciplinary communities separate epistemological and methodological grouping is a defining feature of their identities".
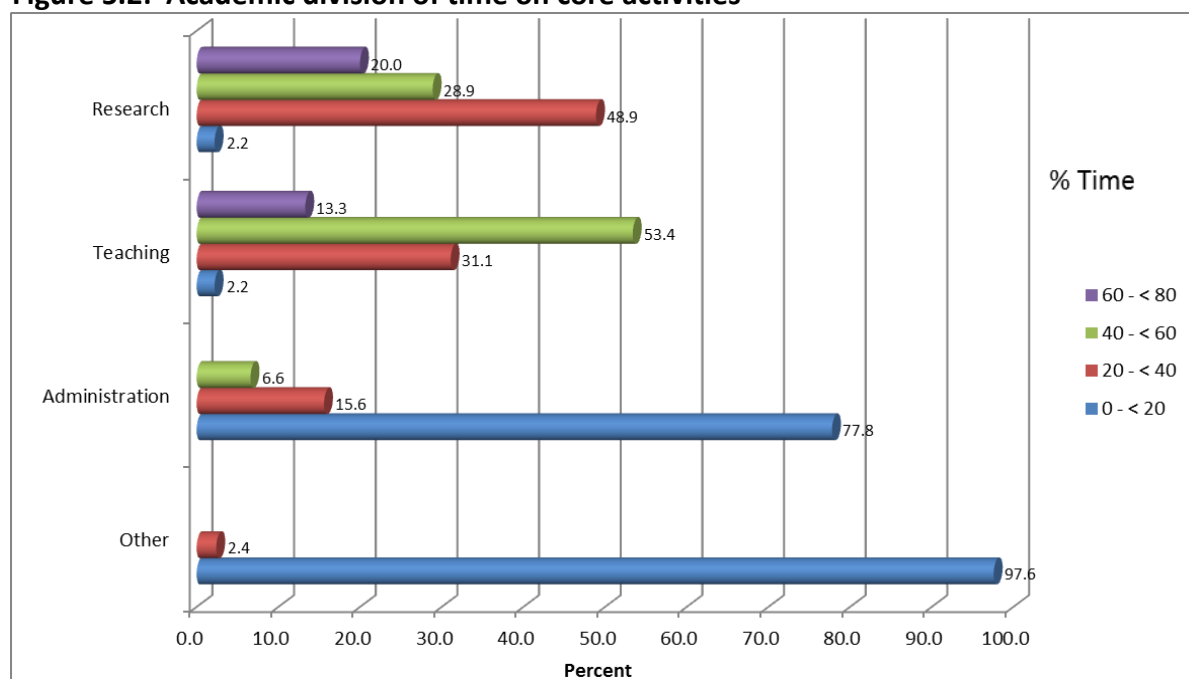
5.2.2 Personal spaces of the academic: Academic profile

In this final section of the biographical data of the academics - their workload and time spent on each of the tasks in their personal space will be discussed. Even though the

academic framework for workload is prescribed by the University, academics still decide how much of the tasks to perform and how they will divide their time performing these tasks. This section will give an indication of what academics are doing and challenges faced. The identity of an academic is based on their academic work, namely, teaching research, university service and administration and the contract with their conditions of service. Respondents were asked in the survey (question 4) to indicate the approximate proportion of time they spent on the following activities: research, teaching, administration and other tasks. The division of time question tried to ascertain what percentage of their time they were spending on the main tasks of their workloads. This division of time was interrogated during the Interviews. Interview respondents were asked to comment on this data. Their responses of the survey respondents follow through the statistical presentations.

While there is a fairly substantial body of literature on how much time academics devote to teaching relative to research (Clayton, 2000; Bellas & Toutkashian, 1999, Fairweather & Beach, 2002; Quigley, 2011), there is little research on how academics divide their time between their different core activities of teaching (professional space) (metacognition development and knowledge), research (personal space) (character development and personal talents) and community engagement (Societal/social space) (citizenship and social skills development)). Figure 5.2 gives a graphic presentation of the percentage of time that academics spend on their core activities.   A guideline document is available for UKZN academics and is discussed later.

Figure 5.2: Academic division of time on core activities

The academics perform these core activities in the 3 spaces: Personal, Professional and Societal or Institutional.   There is a fairly even split of the 80 per cent of the time spent between research and teaching.   Some of the respondents may have interpreted supervision of postgraduate students as research. An academics task comprises research, teaching, administration and other activities like consultation with students and supervision of research. The figure indicates that the highest amount of time, 40 to 60 per cent is spent on Teaching (Professional space) by 53.4 per cent of the respondents. This result ties in with the position of the respondents, whereby the majority of them were lecturers. The next highest proportion of time, 20 to 40 per cent was spent on Research (Personal and Professional space) by 48.9 per cent of the respondents. A significant proportion of 77.8 per cent of respondents spent their time on Administration (Professional space), but this took up only under 20 per cent of their time. It can be summarised that the respondents spend more than half of their time on Teaching and the other half on Research. 97.6 per cent of the respondents indicated that they spent 0 to 20 per cent of their time on Other (Societal) but did not indicate what that was in their responses.

From the documentary analysis *Framework for teaching workloads* Vithal, (2011, p. 4) states that :

> "the ratios of average academic time for teaching
> [professional space] (45%), research [personal space] (40%),
> community engagement [societal space] (10%) and
> administration [professional space] (5%) approved by Senate
> for Schools are retained as the norm and incorporated into
> this framework. This teaching workload framework is based
> on a 45 week academic year which is equivalent to 220 days
> or 1800 hours (8 hours/day = 40 hour week). The framework
> builds on the ratio of 45% teaching time of an 1800 hour
> academic year and hence accounts for the 810 hours of the

academic year as a full teaching load. The 40% research time

includes academics research activity, self-study and

development time".

The UKZN policy document outlines the percentage of time to be spent on these activities as a guideline, but academics' workloads are much higher and the time spent at home is not quantified. This home space will be discussed later.

Table 5.3: Framework for academics workload

	Teaching	Research	Community Engagement	Administration
Senate approved	45 %	40 %	10 %	5 %
1800 hours	810	720	180	90

From the literature (Rupp-Serrano, 2013, Smith, 2003) and interviews, it can be surmised that this time may be spent on consultation with students. To further explore this matter of time allocation, I scrutinised the percentage of time academics spent on research, teaching and administration in the interviews. From the interview data, when asked to comment on the results of the interview, this academic disagreed with the division of time spent on tasks and the locations of those tasks. When asked what percentage of time was spent on administration and other, Prof Dristi revealed that:

> *Administration in the office would be between 20 - 30%,*
> *printing and photocopying – 2% and NO preparing of*
> *teaching material. (AS1, Line 10-15, July 2013)*

A young academic aged between 30 to 40 years and the rank of Associate Professor that was interviewed concurred with the senior academic that their time is used less for administrative and other tasks: Dr Sonali states:

> *I use my office maybe, 23% of the time, because most of my*
> *time I spend at home. I would come in to my office only to do*

administration, but when I need to do consultation of all my postgraduate students, I meet them at home. Printing and preparing teaching material and reading (research) – all of that is done at home. So 20% of my time is spent in the office, the rest of the time is spent at home. It must be understood that I work more than 40 hours a week. (AS3, Line 7-12, July 2013)

As this academic pointed out, comparisons of the percentages of time that academics devote to teaching, research, and administration may be misleading if not considered in the context of total hours worked and requirements for each rank/level of academic, especially if these academics exceed the total hours required of them to work. This academic eliminates this conflict of division of time by expanding time; she works more than the required hours per week, possibly nights and weekends if she is consulting with postgraduate students. Therefore an academic who devotes 40 to 60 per cent of his or her time to teaching may actually spend a greater number of hours teaching than one who devotes 60 to 80 per cent of his or her time to teaching, if the former works substantially more hours per week.

Dr Lakshman confirms that with the high student numbers and as a result of the restructuring, academics have had to take on more responsibility and definitely exceed the framework for their workloads:

So I mean in education studies for example there are 400 4th year students. With the restructuring there's an expectation that administrative staff will be able to do certain things, but one administration officer can't manage themselves and I can't say that is not my job, and I can't do it. (AS5, Line 19-22, July 2013)

According to Naude (2012) in *Business Live* on 5 March 2012 on the academic working hours:

> "There is no such thing as working hours. Good academics work well over 50 hours per week to fit in teaching, assessment, research and community engagement. Most do this in the context of staff-student ratios well above international best practice of 15:1. In fact in 2010 only six SA universities had a ratio of below 20:1, and 13 universities expect each staff member to take charge of between 25 and 43 students".

The workloads with respect to supervision and teaching workloads will be discussed in the next section.

5.2.3. Personal spaces of the academics: Spatial use of Office, Home and Library

The survey and interviews tried to ascertain which spaces were used predominantly to do research, teach and administration.

A range of academic tasks were given and respondents were asked to indicate which were performed at home, their office or in the library. The responses indicated that the majority of them performed most tasks from their offices. Figure 5.4 shows the most frequently occurring responses to this were administrative tasks (100 per cent), printing and photocopying (97.8 per cent), consultation (97.8 per cent) and 63.6 per cent research.

Figure 5.3: Choice of where to work
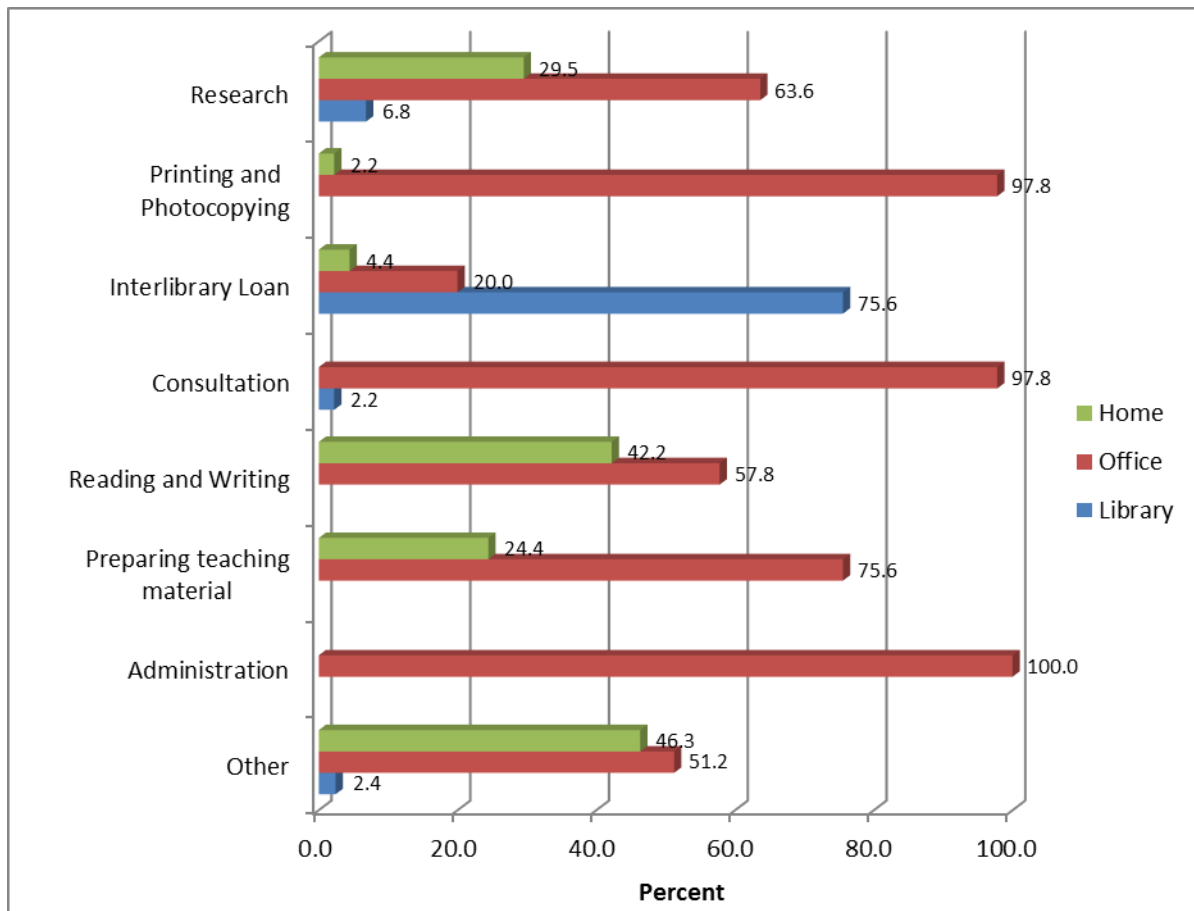
Respondents indicated that the library is only used for interlibrary loans (75.6 per cent) and research (6.8 per cent). The data suggests that because the majority of the academics that responded were lecturers, then they would be involved in teaching and therefore tasks like printing and photocopying, administration, preparing teaching material would take place in the office. It also suggests that the facilities are present in the office as well, when compared to the library or their homes. This data indicates that academics are less reliant and find the physical library space less effective because many of them have their own space, be that an office or at home. Information technology may also be a factor in where academics choose to work and this will be discussed further in Chapter Six.

There is an assumption, and the data seems to indicate that academics physically come to the institution to teach, to meet with their students and colleagues, attend meetings and

sometimes visit the library; but generally speaking they are not present at the institution while they do their research. Table 5.4 presents the spaces that are most used by academics, are their Offices (75.6 per cent), followed by their Homes at (69.8 per cent) and the next most used is the library at 62.2 per cent. The interview data corroborates this statistic.

Table 5.4 : Choice of spaces most used and next most used space (Question 7)

Space	Most used	Next most used	Do not use
At home	18.6	69.8	11.6
In my office	75.6	24.4	
Elsewhere in the School	2.3	30.2	67.4
In the Edgewood Library	26.7	62.2	11.1
In other UKZN campus Libraries	9.3	46.5	44.2
In the local public or other library	6.8	13.6	79.5

Two academics expressed how spaces have shifted and changed. According to participant Prof Dristi, she is not overly concerned about the physical space but that her emphasis is on her supervision, her support and expertise:

> *Basically my work has transformed because I have realised that the home can be such an important and even richer space, which I didn't realize that, for doing research. Especially when you have a structured sense of student times, which I have always had. But I think this has been enabled by the new college model. Home is the space where 98% of my work is done. And this does not mean I do not have regular contacts with the discipline because that is what is required, the discipline and the students. This is not a local trend, it is an international trend, that this office space, the University should put less money in the offices. (AS1, Line 43-51, July 2013)*

This account suggests that the academic was driven by personal space. Personal space is a cognitive process driven by habitual actions mostly from family experiences/thoughts. Her actions indicate that she had a habit of collecting resources from outside the family and bringing them to her space (or to build her family space). In other words she was aware of library resources (electronic and print) but she was using them to develop herself/family (personal space). The bottom line is that she knew all these resources from the library but she used them to develop her talent or her family/students character/talents. The 98 % of her time spent at Home was for her personal space.

Having interacted with international universities for her research and teaching, she reveals that space is of little concern to her or her students. It is about issues of content, learning, assessment more than the appearance and necessity of the physical space. Because of the technology (Internet, computer) and access to electronic resources, usage of these resources is not limited or confined to the library or office or home of the academic. Therefore doing research is about the content of the information resources, not the physical space of a desk, chair and so on. And more importantly, it is about the learning that the student or academic experiences.

Prof Keshav revealed that with respect to his use of the office, home and library space, he required the quietness of the home but that the office met his needs for the technology and facilities like printing and photocopying:

> *Well, I think the office is basically, the home of the academic, because you have the access to all kinds of things. You have the Internet connection, telephone, dedicated to office, communication to the office and from the office. You would find most of the activities that a person would engage in, in this room, through the office. That is why a lot of the administration, consultation, printing and photocopying is done in the office. But for me the reading and writing I would spend more time doing at home, because here in the office, you are dealing with so many things that your concentration*

and deep engagement is not happening, you are sort of
bothered from one issue to another. But at home, you are
working for 3 4 hours at a time. (AS2, Line 2-10, July 2013)

Dr Lakshman confirmed some of the survey findings and provided further insight into the use of the office for access to the Internet and technology, very much like the previous academic*:*

In my case I do most of my research from home and the
reason for that, the home is a less disturbing environment.
For preparation I need access to a computer, to the internet.
Even though I may have the facility at home, I do not want to
use that. I will download from the office and use that at
home. (AS5, line 63-66, July 2013)

Stressing the different ways in which academics work puts their commonality into perspective. These academics revealed that their work style may differ from the conditions and routines of other professions where they have the freedom to set one's hours, to pursue one's intellectual interests, to consult and meet with students at their convenience and to participate in a myriad of administrative and other activities on campus within wider bounds than exist elsewhere.

This academic, Dr Radha's, use of the home is quite different from Professors Dristi and Keshav. She used the home for quiet contemplative work and to get a number of tasks done that is not possible in the office because of the disruptive environment*:*

This depends on the teaching load of the academic, because
those who teach more, might spend less time in the office on
research, the teaching versus the research. When we talk of
administration, people use their office 100%. I use my home
for all of the tasks presented here [research, reading and
writing, preparing teaching material, consultation, printing
and photocopying] because sometime the office space can be
highly interruptive, especially during the semester. Students

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seldom respect the consultation times posted on my door. I am interrupted by staff and telephones. The atmosphere is very interruptive. Therefore when I have really important work and strict deadlines, I work at home. This is somewhat different from the survey responses. (AS6, Line 5-13, July 2013)

This section on spatial use of the Office, Library and Home indicated that academics' work style has changed due to the advances in information technology, the way that students learn and collaborate and learn. The university with its Framework for Workloads has enabled this mobility and flexibility. But the responses from academics interviewed also display their work ethic. It shows that they are willing to work more than the required hours and are more than complying with the framework set down for them by the university. The pervasive nature of information technology has made it possible for them to have flexible work schedules and to communicate with their students, use the resources from anywhere. The use of information resources will be discussed in the following section.

5.2.4 Personal spaces: Choice of Information Resources to do Research (Question 8)

The library's core purpose is to provide resources and services to its users to fulfil their aim of research and learning. There are a number of information sources that can be used to do research. Respondents were requested to respond from a predefined list of information sources or also referred to as 'access and discovery' tools to indicate what was used extensively, moderately used or not used in their research. In addition to these tools, the survey provided a predefined selection of information source providers and requested a response on their usage of them. These were rare books and manuscripts, photographs and images, newspapers, maps and charts, artefacts, electronic sources such as bulletin boards and alerting services, bibliographic tools, indexes and abstracting services, electronic re-print archives of articles or research papers, electronic publications like e-books and e-journals, electronic full-text services and printed books and printed journals.

Data from the documents: Annual reports and reviews of the UKZN Libraries from 2007 to 2014, Circulation statistics for 2014, and Minutes of Library Executive management meetings suggest that provision of electronic resources by the library has increased over the last three years. The increases in usage is not surprising since the library has reported that there has been a widespread acceptance of major subscription packages, commonly known as 'big deals', which provide access to a wider range of journals at a negotiated discount than those that the library previously subscribed to. The library currently subscribes to more than 100 journal packages by leading vendors like ScienceDirect, Taylor & Francis, Sage Publications, ProQuest and Web of Knowledge (UKZN, Library, 2014). It is possible that academics have also discovered these resources by searching the various search engines.

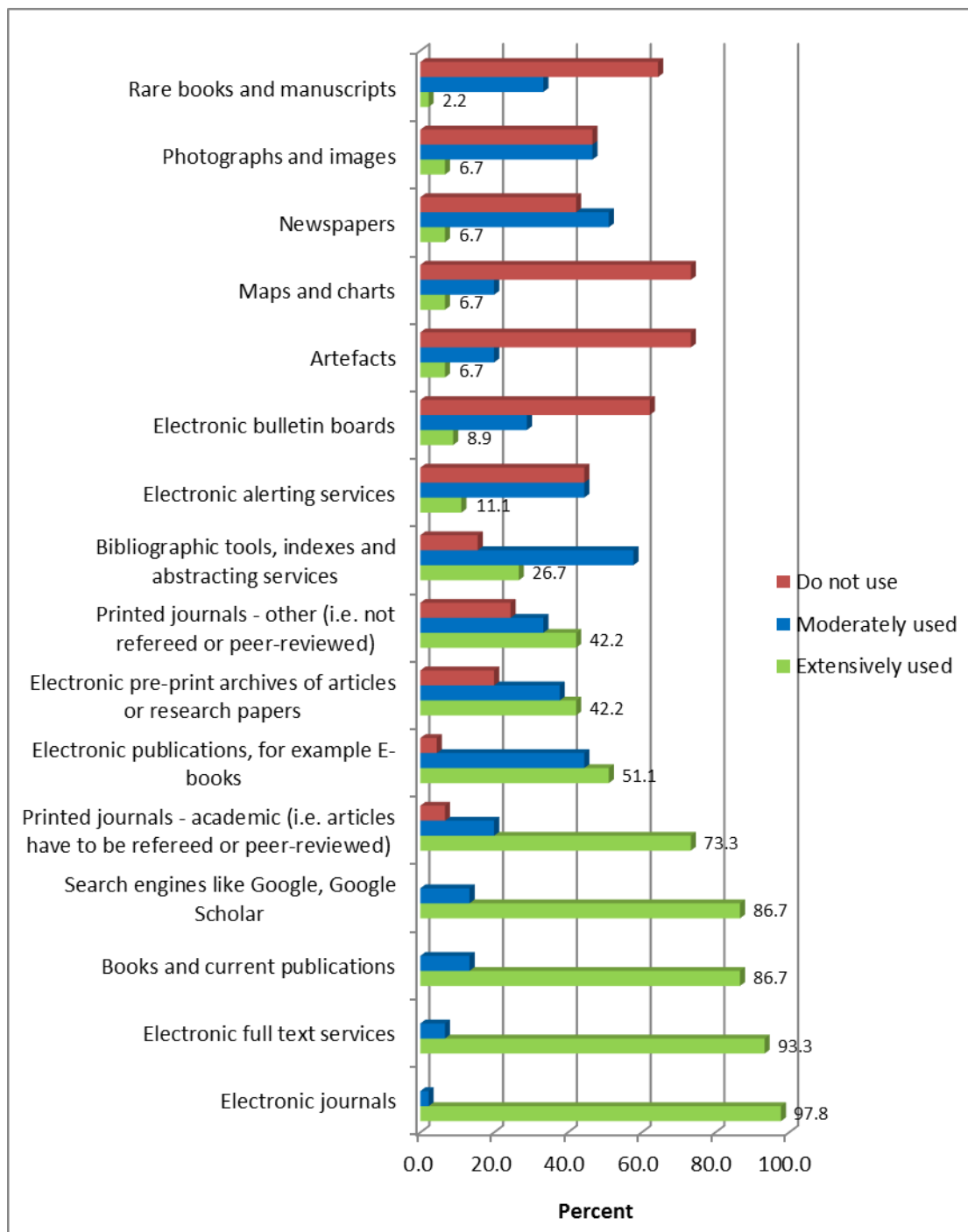**Figure 5.5: Information resources used in Research**

Figure 5.5 summarised the views on the information resources most extensively used or essential to their Research. The electronic resources – full-text, journals, publications, e-books has the highest recorded percentage of use. This is followed by 87 per cent of books

and current publications. In comparison rare books and manuscripts, photographs and images, maps and charts, artefacts and newspapers were not used.

This finding demonstrates how rapidly the use of Internet or electronic sources have permeated academic research behaviour. This finding also coheres with the location of where respondents chose to do Research, in their offices and homes where there is Internet access. These findings are consistent with the literature on information-seeking (Wilkins J & J, 1997) that academics prefer electronic publications as a major source of information.

This is further corroborated by research done by Haglund and Olsson (2008, p. 55) using an ethnographic methodology of three Swedish universities in Stockholm that found that "for many researchers, especially in the sciences, Google is the first choice for information—all kinds of information. The researchers use Google for scientific information, looking for everything from methodological information to ISSNs, and some even state having moved from subject-specific databases to Google (and Google Scholar). Only a few of the researchers have knowledge about Google Scholar. The researchers used a relatively limited (number) amount of sources, a few subject specific databases (in medicine; PubMed) recommended by colleagues or supervisors, and report their experience of these as positive". The findings were also confirmed by studies done at the University of Tennessee (Ge, 2010), and by Gerke and Maness at the University of Boulder, Colorado (2010) and the study of Loughborough University that suggested that academics or faculty used e-resources chiefly.

Using the Pearson product moment correlation, a statistically significant correlation was found between electronic journal usage and at home, (the score is r= -.269, p=.081) and electronic journal usage and the office (the score is r= .265, p=.078) reflecting that there is a consistent, predictable association between the variables. The statistic provides a measure of the magnitude of the relationship between the two variables, electronic journal and location. This suggests that academics are accessing the electronic resources firstly from their offices and homes and seldom from the library or elsewhere in the School. The same relationship could not been seen for the other formats like electronic full-text services and location, the score was low of r=.041 at home and r=-.152 for the office suggesting that this

may not be significant. There was a similar finding for the search engine Google and location home and office (the score is r= -.083, p=.596). For books and current publication a significant correlation was found between the two variables, the Edgewood Library and books (the score is r= -.220, p=.147). These statistics confirm that there is a significant relationship between the variables, in some cases however it is not very significant. Electronic networks provide opportunities for use of major information resources at locations remote from libraries, and in the case of academics primarily offices and homes.

Contrary to the findings reported to in the Literature review (Cocciolo, 2010; Francis, 2005; Ge 2010) on the trend that academics frequency of use of their own academic libraries decreasing, the survey indicated that the a number of academics (80 per cent) favour their own academic library and find it important to their research. From the predefined list, the responses for this was higher than for any of the other providers.

Most respondents found the library to be the most important information source. But to become the most important information source is a key challenge for university libraries with the unrelenting volume and cost of research material. In the five year period from 2009 to 2013, the library expenditure on journals and databases had increased by over R10, 091,441 but in the period 2011 to 2012, the expenditure on journals and databases had increased by R12, 538,533. The library had spent more than 70 per cent of its material budget on access to journals and databases and print journals (University of KwaZulu-Natal, Library, 2013, p.2).

One possible reason for increase in prices for books and monographs is that their increase is slightly higher than inflation, and the concomitant increase in the number of titles produced by the discipline, means that the library cannot purchase as it did previously and cannot keep up with the historic levels of coverage (UKZN, Library, 2012c). In 2012, the School of Education received 9.7 per cent of the total library allocation of R 3 million. But the average price of an Education monograph or book is R 543.00, so this would have only enabled the library to purchase approximately 510 books for that financial year (UKZN, Library, 2012c). As academics are not able to purchase all publications in their fields or disciplines, they are

having to make do with access to the library for a declining proportion of what is available globally.

Table 5.5 presents the other information sources that were used by academics. This would suggest whether academics were using the library collections, their personal library collections, or other sources like the department or School or external sources like the research institutes and the Department of Education and reveals that the Information sources most extensively used is the library, 80 per cent, followed by their own private collections at 53 per cent, and then networks they have formed from conferences and other researchers and colleagues at a low, 13.6 per cent. This may suggest that academics rely heavily on the 'purchased' collections of the libraries and their own private collections, but usually material displayed at a conference or meeting is usually related to the topic of the conference and may not be relevant for their research or that their colleagues may not share the same research disciplines as they do.

Table 5.5: Other Information Sources

Information Source		Component		
		1	2	3
Own private collection	53 %	.171	-.066	.770
Library	80 %	.188	.326	-.604
Colleagues	13.6 %	-.071	.899	-.133
Departmental resources	6.7 %	.453	.685	-.073
Conferences / Researchers networks	33.3%	.356	.390	.553
(Any) other university library	20 %	.683	.096	-.498
Research institutes, like the HSRC	6.8 %	.793	-.028	.142
Department of Education	6.8 %	.711	.235	.150

Cohen, Manion and Morrison (2011, p. 674) state that factor analysis is "used to discover patterns among the variations in values of several variables. This is done essentially through the generation of artificial dimensions (factors) that correlate highly with several of the real variables and that are independent of one another. In using factor analysis, a rotated

component matrix was generated to explain the categories or relationships between the components of the information source". There is a relationship between the academics internal sources (with the purple highlight) because the scores are higher than 500 like their own private collections and collections they have compiled from conferences and researchers networks. Likewise there is also a relationship between the other category and the external sources like the research institutes and the Department of Education (blue highlight) whose scores are also higher than 500. And finally there is a relationship between the colleagues and department resources which are internal to the School (green highlight).

This significant relationship between the variables was affirmed by a response by an academic in the open-ended questions (question 35) in the survey commenting that he had started his own collection of books: "*I am moving towards expanding my own collection".*

Academics were probed on their knowledge and usage of other electronic resources, which are commonly known as Web 2.0 and social networking technologies.

Table 5.6: Other electronic resources or Web 2.0 tools

Resource	Yes	Uncertain	No
Moodle	42.2	15.6	42.2
Social networking sites, e.g. Facebook	35.6	8.9	55.6
Wikis	20.0	2.2	77.8
Other	9.3	20.9	69.8
Blogs	8.9	6.7	84.4
Twitter	8.9	4.4	86.7
Podcasting	0	4.4	95.6

Responses in Table 5.6 indicated that most respondents, nearly three quarters (73.3 per cent) did not use any of these technologies. This response could also indicate that for academic research, these resources are not required. They are more interactive and social sites which would be more popular for undergraduate students in the university environment. This response could also indicate that academics in Education do not

embrace Open Access, and Web 2.0 tools in their teaching and research as is the case with academics in other disciplines.

Web 2.0 technologies are Web applications that allow participation and sharing of information. But sharing, can be used with most other technologies and is interoperable, and the design is centred around the usage which currently is interactive and collaborative (Miller 2005). The term Web 2.0 was first conceptualised by Tim O'Reilly in 2004. This technology was popular for those developments and business models that had borne the brunt of the technology sector market crash of the late 1990s (Miller, 2005). The great strength of Web 2.0 tools is its ability to allow users to interact and collaborate with each other in an electronic environment. The data suggests that academics may not be familiar with the terminology of Web 2.0 tools. Moodle is a web-based learning management tool at UKZN and most academics are required to use it for their undergraduate courses. The low responses suggest that academics are not familiar with these tools, are not using these tools or find it necessary to do so.

The study by the Consortium of University Research Libraries, & Research Information Network (2007, p. 60) and RIN on academics use of libraries corroborated this finding that "a majority of academics are making at least occasional use of one or more web 2.0 tools or services for purposes related to their research. But frequent or intensive use is rare, and some researchers regard blogs, wikis and other novel forms of communication as a waste of time and even dangerous" (Consortium of University Research Libraries, & Research Information Network, 2007, p. 68). Academics who use web 2.0 tools and services do not see them as substitutes for their current communication channels or are keen to replace them with their current practices. Although they seem supportive of the web 2.0 tools, they are willing to wait to see its observable advantages before they combine this with the traditional technologies. A possible reason for this distrust is the element of quality, formal peer review and more importantly academics have no way of knowing who the authors are of these tools.

5.3 Professional spaces of the academics: Research and Teaching behaviour

This section discusses the Professional spaces that academics occupy. Section B of the survey gathered data on the research behaviour of the academics. Research behaviour includes their cognitive behaviour – how they decide on what resources to search and find information from, for teaching and research? – How do they know about the library spaces, its services and resources? There are three different categories of Research behaviour discussed in this section. They are: how are the Office, Home and Library spaces being used to perform their core activities? Their publication record is also discussed. Publication is an output of their research work and supervision is a major component of their teaching workload. Both exercises require resources. The library is a storehouse for these publications (in the form of their journal articles and books) as well as providing resources for their teaching and supervision.

5.3.1 Teaching/Supervision

Teaching and research form an integrated core for the academics. For an academic to supervise postgraduate students research, apart from being aware of the discipline and the research process, the academics also has to be aware of the information resources available to provide guidance to the student or to direct the student to the library space for assistance with the resources. This relationship between the information resources and supervision is a central one and by virtue of that, the library space, resources and services becomes an important part of this research process. Supervision of postgraduate students is regarded as Teaching as outlined in the Framework: The *Framework for teaching workloads* Vithal, (2011, p. 6) goes on to state that:

> The fourth main driver of teaching time is supervision.
> Research supervision is regarded as research teaching and
> counted within the category of teaching time. Each academic
> at senior lecturer level and above is expected to supervise at
> least 6 postgraduate students as per the approved University

research norm. The ratio of supervision time to the other categories of teaching time may therefore vary according to different academic rankings of individual staff. For example, professors may be assigned larger numbers of doctoral students in their teaching workloads compared to the other levels of academics.

Supervision can be regarded as academics guiding, supporting, monitoring and encouraging their research students to completion of their postgraduate degrees. All academics have to supervise postgraduate students doing their Honours, Masters or Doctoral degrees. Amongst the major areas of Teaching, Research and Community engagement, supervision is regarded as Teaching and not as Research. But academics may conduct Research with their students, or use their students as co-researchers. There is a concerted request by the university to increase postgraduate student enrolments but this comes with challenges. Johann Mouton, Director of the Centre for Research on Evaluation, Science and Technology, was speaking at a workshop on the 17th November 2013, convened by South Africa's National Research Foundation and the Carnegie Corporation of New York, on *Expanding and Sustaining Excellence in Doctoral Programmes in Sub-Saharan Africa: What needs to be done?* stated that in 2003, South Africa's Department of Education revised the national funding framework for universities, and research masters and PhDs as knowledge outputs were added to subsidies for research outputs. "Suddenly money came into the picture," said Mouton. The average doctoral graduate in South Africa is 40 years or older, and 70 per cent of PhD students are part-time, with major implications for student preparedness and commitment to studies – which affects drop-out rates. Most PhD students are female, with most working full-time and having families. "The bulk of doctoral supervision currently happens at a distance, and the average student gets only two hours of supervision a month". "From 2005, universities in South Africa were rewarded quite significantly for producing more PhD graduates in all fields of science". Producing a PhD was valued as equivalent to three article units, with the rewards ranging from R 568,800 to R 853,200 per graduate (Mouton, 2013, p. 1).

There are 456 registered postgraduate students in the School of Education, UKZN of which 133 are Doctoral, and 323 Masters (*UKZN, Institutional Intelligence Reports*, 2014). This has implications for the physical space of the library, provision of research support and services to these students. It also has implications for the collections – physical and virtual that the library should acquire or make accessible, the content of the collections should meet the needs of the large number of students.

Question 17 and 18 of the survey asked respondents if they supervised research conducted by others and if so, what category was supervised. Multiple choices were offered. Of the 45 academics who responded to the survey, 88.9 per cent or 40 of them indicated that they supervise research and a small percentage of 11 per cent indicated that they do not supervise research.

Figure 5.6 presents the breakdown of the different categories of postgraduate students

Figure 5.6: Supervision of research
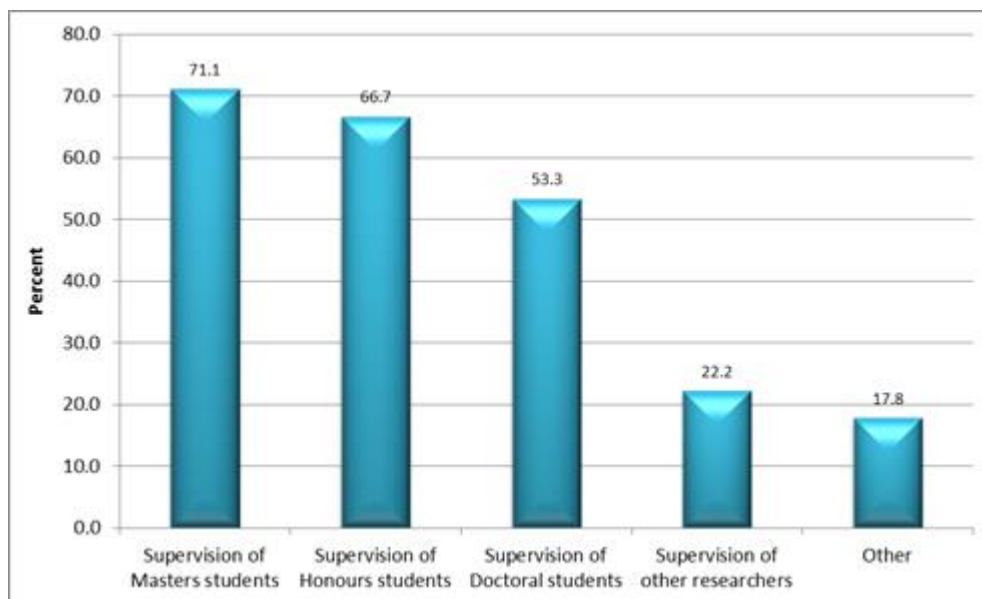
Supervision of Master's students was the highest percentage of students. This figure matches the large number of Master's students (323) registered in the School of Education. The level of student also indicates their level of qualification. As researchers, academics should be aware of resources and it stands to reason that they have to know the resources

to supervise and guide their students. All the interview participants commented on the time spent on supervision of postgraduate students.

Dr Radha iterated the request for increased enrolment at the university:

> *With the emphasis on being a research-led university, UKZN staff are compelled to engage in supervision. These figures are to be expected. But unlike other degrees, in Education, teachers are required to practice before engaging in postgraduate work. This is probably the reason for the low numbers in the Honours programme.*

But Prof. Sonali responded that supervision of the student does not end once the student has completed the degree, it is about tracking the student's development after completion and providing them opportunities for further study or publications and more research:

> *A lot of our time, especially now, with this drive to get more students and to get more research done, is spent on supervision, about 60 hours. I have 5 Doctoral students and 7 Masters students. I work closely with my students. Once they have completed their masters, I make sure they go to a conference and then we try to write a paper. So I give them time, and in between that time I help them develop. And in that time, they develop until they are ready to register for their doctoral degree. (AS3, Line 27-32, July 2013)*

This comment relates directly to the second critical question on what is academics' understandings of the library space and what is the nature of their usage and their interactions with the library space in meeting these demands set by their teaching workload. Her response indicates that she sees her role as coach and mentor to students, not only teaching them but providing guidance and advice to the researcher-in-training for many years. This academic envisioned her role to be significant in the progress of these researchers-in-training especially with regard to their knowledge and skills. The research done by Khoza and Manik (2015, p. 204) reveal that postgraduate students "get motivated

and effectively use technologies in their studies if it was properly introduced to them by their facilitators with an effective support system".

But Prof Dristi had a different view about the time she spent, she felt that supervision of the postgraduate was Research and not Teaching. Her view is that you teach in the classroom or lecture theatre but your engagement with the postgraduate student is Research and not Teaching. According to the policy, the percentage of time is about the same, 45 per cent for Teaching, 40 per cent for Research and 10% per cent on Community Engagement.   But this senior academic believed that the nature of the teaching is different, it is one-on-one consultation, guidance and assistance and you have to do readings and go through the chapters. It is about time to completion, the minimum period in this academics case, and Prof. Dristi affirmed that:

> *What is the evidence – 2012 graduation throughput - 7 students within 2 years with Masters, and 1 PhD. For the 2013 graduation throughput. I am working on a model of two years. For 2014, I will give you a different statistic. (AS1, Line 258-259, July 2013)*

But Prof Keshav stated that for him Supervision is more about 'enculturating' the students and engaging with them on their research areas. The more students you have to supervise, the wider the network of research areas the academic is involved in:

> *For me, (the) supervision, is a process of enculturating students to read, to access for research. To get to know the field and the more students you have, the wider the scope of being exposed to a range of readings. When you supervise a number of students, you have different focus areas and much greater scope. The supervision allows the academics to be, more exposed to a range of readings. (AS2, Line 58-63, July 2013)*

Postgraduate research is discipline and subject-specific and academic libraries cannot stock all the material in their area of research, so this has implications for services like interlibrary loans and subject assistance from the librarians. The relationship between the library and supervision of postgraduate students is an integral one as the library provides the necessary support for research in the form of physical space, information resources and subject expertise and library services like interlibrary loans.

Dr Lakshman concurred that the university request to increase student numbers is reasonable because of the benefits that this will accrue for the academic, not only a financial benefit, but also the opportunity for promotion and the need to meet the goal of increasing PhD productivity in the country:

> *This request is quite reasonable. The school is pushing itself as a postgraduate provider. It is encouraging students to do postgraduate work. There's a financial benefit as well for the university, larger subsidy for postgraduate than undergraduates. There is more and more demand for staff to supervise postgraduates. If you want to apply for promotion and it is becoming a conditions of service requirement. (AS5, Line 47-52, July 2013)*

The Academy of Science of South Africa (ASSAf) study on the PhD (2010, p. 45) found that there are not enough PhDs produced by universities in relation to the developmental needs of the country. The study revealed that South Africa produced 1,274 PhDs in 2007 (1,421 in 2010) or 26 doctorates for every million people in the country and that these graduates were over 30 years. The study also reported that 37 per cent of Masters students went on to complete a PhD and that it took an average student 4.8 years to complete a PhD.

A barrier to increasing productivity of PhDs was the limited supervisory capacity of academics. And that only a third of academics at universities hold a PhD and that the ratio of doctoral student to supervisor was 2:1. One of the requirements for a PhD supervisor is that the supervisor should hold a PhD and have some supervisory experience. And that pool of academics with PhD is small at UKZN and other South African universities. One of the

recommendations of the report was to scale up the production of PhDs at universities (*Academy of Science of South Afric*a, 2010, p. 17).

The survey questionnaire and the interview revealed that academics in the School have a very large supervision load. Most of the interview respondents indicated that they have been 5 – 8 PhD students and 6 - 8 Master's students. And most of this supervision happens off-campus.

Section A attempted to draw a demographic profile of the academics. An academic performs several functions simultaneously, researcher, lecturer, administrator and supervisor, and their areas of interests and requirements alter with time and the progress in technology has an effect on their information-seeking skills and their usage of information. The personal and professional spaces are used simultaneously. From the data, the majority of the respondents were between the ages of 40 – 49 and in the rank of lecturers. The data reveals that the biographical construct of age and gender were not distinguishing factors in their academic workloads. The question on the division of time revealed that academics spent between 40 to 60 per cent of their time teaching and 60 to 80 per cent of their time on research and this was done predominantly at home, not in their offices. The office was used for administration and other tasks. The majority of them exceed the workloads as outlined in the university framework document. As the library is acquiring more resources electronically, they need to be aware of what resources academics require and use and what resources are required for their postgraduate students and their own research.

McCallin and Nayar (2012, p. 65) state that: "supervision pedagogy and recognising research teaching is a sophisticated skill". With the internationalisation of students and increasing students, the supervision process is being fast-tracked. Supervisors are assuming the responsibilities of teachers of research and the additional responsibility of administration of students and the academics supervisory role has expanded with multiple responsibilities of being an advisor, doing the quality control and providing support and guidance. (Barber, Donnelly & Rizvi, 2013). McCallin and Nayar (2012, p. 66) emphasise that "research students need to be taught how to research, how to write a grant proposal, how to prepare an ethics proposal, how to review the literature, how to write, how to analyse data and how

to manage a research project and this role has been taken on by the supervisor". Manathunga, (2009), Haglund (2008), Ge (2005) and the library literature state that academics are becoming the important support regarding information resources for their students. Supervisors are usually the first point of contact for students and they have taken the role of providing the research support for students. As academics have differing needs, regarding their teaching and research, the technology is assisting them to conduct their research and teaching activities from their offices, and in their own time and in their own space.   When libraries and librarians understand their support role to supervisors, including their approaches and relationships and with other stakeholders at the institution, a more knowledgeable approach for rendering an effective library service and providing resources will be possible (CURL & RIN, 2007, p. 53).

The study by the *Research Information Network* (2011, p. 34) on the role of the supervisor had similar findings that these students consult regularly with their supervisor and he/she is an important source of assistance, advice and guidance. Academics therefore, have an influential role in the information-seeking skills and knowledge of their research students in library spaces and its available resources and services. Of concern to the library, is the finding that: "not many supervisors have confidence in their ability to advise their students on library resources and on information searching, using IT to stay up to date with relevant research, research data management, open access, social media and legal frameworks" (*Research Information Network,* 2011, p. 46). The implications of this research concurs with this study that the library has to provide the necessary support, advice and training for academics to perform this supervisory function, especially with the abundance of information sources electronically available.

The next section will discuss the research behaviour of the academics in terms of where they work and what resources they use for Research and their Publications.

The next section will discuss the Publications and publishing history of academics. This is an important component of the Research process and assessment and ranking of academics. The library is a storehouse of these publications produced by academics and used by academics.

5.3.2 Publications

Academics are under great pressure to do research and to publish and there is great emphasis on their research productivity. Research productivity (Creamer, 1998, p. iii) can be defined as: "an index of the School and institutional prestige and is associated with an individual academic's reputation, visibility, and advancement in the academic reward structure". Research productivity affects the strength and funding of the institution and in recent times, their reputation and ranking. This suggests that the quantity of research is far more influential in deciding the mobility and trajectory of the academics career than is the quality of the research conducted. Academics' performance is measured by their research productivity and it is a tool for promotional purposes and is a job requirement. Since teaching and research require the use of a variety of sources of information, this section of the questionnaire tried to ascertain how publication history impacted on library and information usage. Academics have some kind of responsibility to publish, so to determine what materials were being used and why it was used, questions in this section were asked. This section discusses the university policy regarding the requirement for all academics to do research in the form of publications, how frequently academics publish and whether they do that alone or as part of a team. This is a critical component of academics' tasks and in order to perform this task, the implication for the library space is integral in providing the necessary support in terms of the library collection and resources, physical and virtual. Providing access to information and supporting the research endeavour is the core task of the academic library.

5.3.3 Publishing Research: University requirements for academics

In South Africa, the Department of Higher Education (DHET) apportions funding to HEIs by means of a state funding formula, with a key output of research productivity. To benefit from this funding formula, South African universities have formulated their own strategies

to improve the research productivity so as to access the funds from DHET. UKZN's Research Policy (UKZN, Research Office, 2014) "recognises the value of individual research, and fosters and nurtures the research activities of individual researchers" (UKZN, Research Office, 2014).

Prof Dristi revealed that the School's goal was to increase research productivity and by so doing would increase the funding coming into the School:

> *The path is about increasing and elevating our standing. The institution is serving one goal, and that goal is to ensure researchers have all the support they need to ensure that research happens. It is the research and the grants that put UKZN where it is. (AS1, Line 152-155, July 2013).*

The university rewards research outputs and as the policy states: "Differential rewards are provided, for instance, for journal articles, conference presentations, books, patents and successfully graduating research students (Research Office, 2008). These rewards are subject to a mechanism of evaluation of quality and is not based solely on quantity. The funding for the academic is based on their total productivity unit count (PU's) that is calculated from the quantity of articles published in accredited, peer-reviewed journals, the quantity of books or chapters in books written, the number of refereed conference proceedings submitted and the number of masters and doctoral students that have graduated that were supervised by the academic. These exclude such works as book reviews, editorials, letters, and notes. At UKZN the benchmark is 90 publication units (PU's) for an academic at the level of lecturer, which averages about 1.5 DHET accredited publications per year (Division of Human Resources & Equity, 2006). The data is suggesting that academics in the School are attaining the goals of the required productivity units for their level and Table 5.7 presents the number of academics who have produced in accredited journals.

As academics are pressured to publish in accredited journals, academic libraries have to ensure that they stock these publications in their collections or have electronic access to them. The quality of a library's research collection is an indication of its strength in

supporting the research endeavours. Journals in the collection, should be the core titles for the disciplines on offer at the university, for the research focus areas of the university and the core journals from the various journal ranking lists, but especially the South African titles. Libraries use these lists as a collection development tool when building their journal collections in specific disciplines, nationally and internationally.

Table 5.7: Accredited publications by academic rank

Accredited/Approved Journals		Position					Total
		Professor	Associate Professor	Senior Lecturer	Lecturer	Tutor	
	Count	4	6	5	21	1	37
	% within Accredited / Approved journals	10.8%	16.2%	13.5%	56.8%	2.7%	100.0%
	% of Total	10.8%	16.2%	13.5%	56.8%	2.7%	100.0%
Total	Count	4	6	5	21	1	37
	% within Accredited / Approved journals	10.8%	16.2%	13.5%	56.8%	2.7%	100.0%
	% of Total	10.8%	16.2%	13.5%	56.8%	2.7%	100.0%

5.3.3.1 Frequency of publications

As the requirement for productivity units is calculated annually, it is imperative that academics publish frequently. In order to do so, they need quick and fast access to the relevant material in their fields. This support provided by the library is integral to academics meeting this requirement because not all the material required, can be purchased by the academic. There will be a reliance on the resources provided by the library. Therefore the strategy of the library to move most of its journal collection to electronic access will enable academics to have access to the material from anywhere and anytime (Library, 2012). Questions 11 and 12 in the survey sought to ask respondents about their publications in the past few years. This question has predefined choices which asked specifically about

accredited and approved publications, since these are traditionally a measure of quality in research and are important in university rankings and academics ratings. Also, research findings have to be disseminated and published if they are to add to knowledge or to make an impact on society. Multiple responses were allowed.

According to the 2014 Annual Research Report, the School of Education had 11 NRF rated researchers, of which eight were at the level of Professors and 3 were Lecturers. The Annual report also listed the 5 prolific researchers from the School, those who had obtained three or more author units (UKZN, Research Office, 2014). The data and the annual report are suggesting that the higher levels of staff in the School of Education are producing most of the research and receiving the accolades for that research. The table below presents the number of publications by the academics affirming what was reported in the Annual report.

Table 5.8: Frequency and number of publications

Publications	Percent	Average Number of articles	Standard deviation
Accredited / Approved journals	82.2 %	1.8	1.4
Non-accredited / Non-approved journals	35.6 %	1.5	1.2
Books (written or edited)	17.8 %	1.3	0.6
Chapters in books	51.1 %	1.1	0.4
Reports	37.8 %	1.3	0.5
Conference proceedings	66.7 %	1.9	0.9
Other	24.4 %	1.0	0.0

Most respondents (82.2 per cent) publish in accredited journals. The average number of items published in this manner is approximately two. Academics can publish in any journal, but those publications that are recognised as their research productivity are the South African Post-Secondary Education (SAPSE) journals which was a formula that was introduced to determine how the government would allocate funding to the HEI's and this was replaced in 2004 with New Funding Framework (NFF). Academics are also rewarded financially through productivity units by accredited and peer-reviewed journals only. The DHET

maintains a list of the accredited and approved journals. Therefore to be acknowledged for their research, academics select journals for publication from these lists.

Table 5.8 indicated that 82 per cent of respondents had published in accredited and approved journals. Table 5.7 had indicated that the highest percentage of responses were by lecturers. This is interesting given that their workloads are high. There were 37 articles in these journals, an average of 1.8 for each person that responded to this question. The next highest proportion was for conference proceedings, 66.7 per cent of respondents published 26 articles in proceedings. The lowest percentage of 17.8 was for written or edited books, but 51.1 per cent for chapters in books. The data is suggesting that it may be 'easier' to publish in accredited journals especially as it has become such an important push for academics to publish. But as a book is published once-off rather than periodically like a journal, that it may be a challenge to publish a whole book. The data is also suggesting that it is 'easier' to publish a chapter in a book. If academics did not feel the pressure of publication, then it may be assumed that they would concentrate on other forms of publications. The university reward system also seems to be pushing towards that as well (Bellas & Toutkoushian, 1999, Sax, 2002).

Dr Lakshman as a lecturer has stated that he has focussed on teaching but due to the focus the university has placed on research and publishing, he has now decided to publish on what he teaches. , He says that:

> *In Education studies for example, where the numbers are so high, you will find that what time is left we trying to do research. So we not having enough time, we are trying to become opportunistic and writing papers on the modules we teach. (AS5, Line 52-54, July 2013)*

Academics are forced to become opportunistic and meet the university requirements by publishing in their areas of expertise and in spaces where they spend the most amount of time. It must be a challenge balancing their teaching workload with their research responsibilities. The next section will discuss academics publication behaviour, whether their research is done alone or as part of a team.

5.3.3.2 Publishing individually or collaboratively

As academics are rewarded for their publications, the value of the reward is dependent on whether it is an individual effort, that is if they are the sole authors or a collaborative, team effort. If it is a team effort, then all members of the team are rewarded. For example, an academic would receive 60 PU's for an accredited journal article, but if it a team effort and the academic has co-authored the article, then the subsidy is shared between the academics and if the academic were from different institutions, then the subsidy is shared between the institutions. Academics are also rewarded for promotional purposes if they are the sole author or the primary author. Respondents were asked in question 12 of the survey questionnaire if their publications were typically sole or joint. This question attempted to find out if academics worked alone, in groups or in group projects.

Figure 5.8: Publications : sole or joint
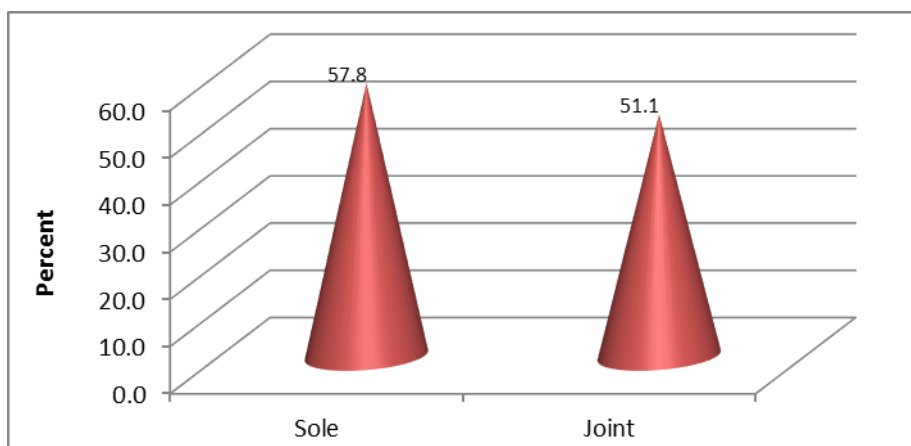
Responses to this question 12 in the survey showed a marginal difference between academics sole or joint publications. Here the academics would have authored or co-authored publications and this would include publications authored by their postgraduate students.

To further ascertain how academics conducted research individually or alone or part of team, question C1 asked respondents whether they conducted their research primarily alone or as a part of a team. This has implications for their ratings and publication units.

Researchers are awarded more publication units if they are sole authors or the first author. Figure 5.6 presents the publications history of the academics. The distinction between the two questions showed that academics publish predominantly alone or as the sole author and that there are collaborative efforts and that they produce joint publications and team publications. As the university is trying to address the imbalances of the past, and would like to improve the research productivity levels, as a number of academics produce research output far below the UKZN expected norm of one SAPSE research unit annually, a number of measures have been adopted. Firstly there is a new sliding scale of expected research productivity norms for academic post levels of lecturer, senior lecturer and professor, a minimum of sixty, ninety, and one hundred and twenty productivity units per staff member per year. Secondly retired academics have been appointed to positions of Senior Research Associates and can still engage in research and mentor academics. Thirdly the university recognises individual achievement but encourages networking and collaborative research and has put in place a few ways in which it encourages collaborative research, through postdoctoral fellowships, visiting research fellowships, inter-institutional research and the formation of research institutes and centres (UKZN, Research Office, 2008).

Figure 5.9: Publications sole or team effort
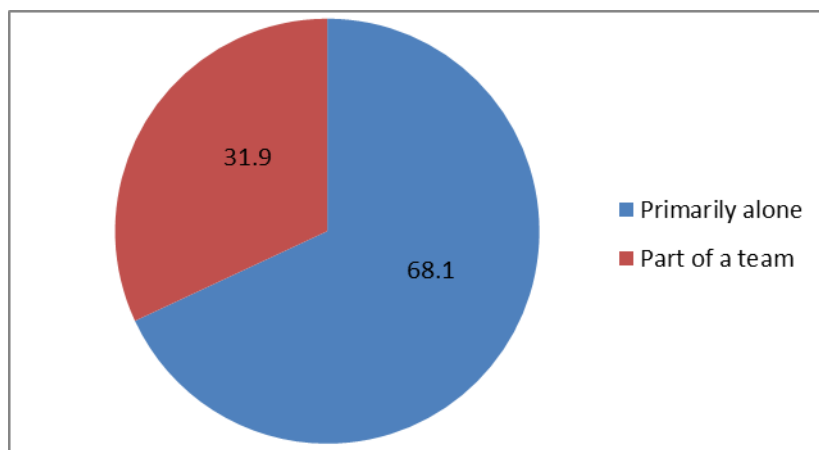
The data revealed that a little more than two-thirds (68.1 per cent) indicated that they worked primarily alone. This suggests that academics in the School have not been part of collaborative efforts with other institutions, with colleagues in other disciplines or with the research institutes and centres in the School. Kyvik (2013, p. 530) points out that "research teams are primarily a characteristic of the natural sciences, medicine and technology, this

form of work organisation has become increasingly important in the social sciences and, to a lesser extent in the humanities". The data may suggest that academics may be publishing research with their postgraduate students as it is a requirement that all postgraduate students, Masters and Doctoral publish an article after completion of their degree. There are a number of publications that are coming through theses and dissertations. A number of academics in the School of Education have completed their PhD's in recent years (School of Education, 2013). In the final question on their research behaviour, Question 16 in the survey, respondents were asked what the frequency was of this interaction, and were given six options on frequency to respond to. Figure 5.10 presents the responses.

Figure 5.10: Frequency of interaction of Research teams
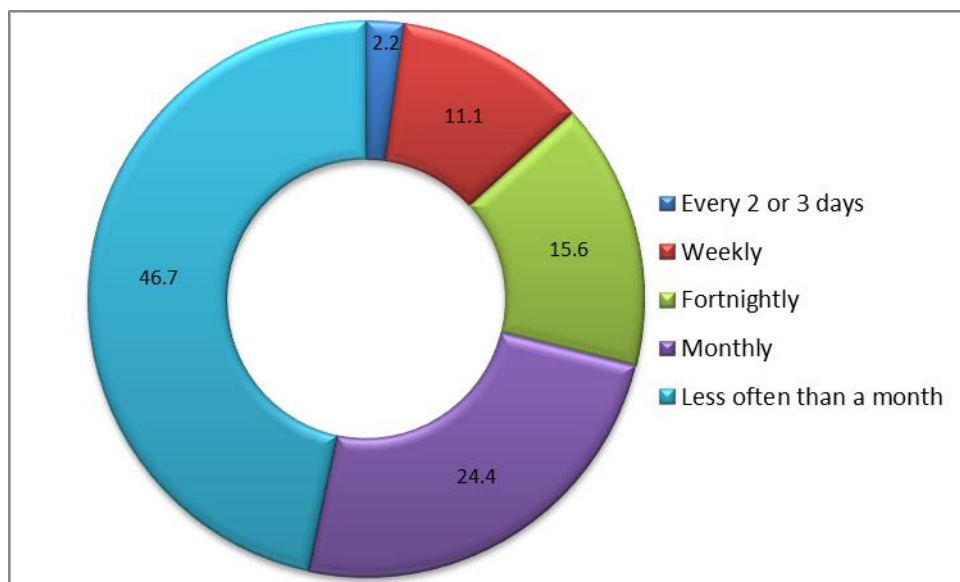
The majority of the responses (46.7 per cent) indicated that the team meets less often than a month. This figure could indicate that academics are spending more time on their individual research and meet monthly to interact for the collaborative team research.

The data seems to suggest that team research is not popular in Education. This may be the case because academics spend a considerable amount of time building relationships with researchers at other institutions, applying for research funding through the NRF and external organisations, and writing proposals for research support. As a high percentage of such applications may not be successful, the average academic submits many more

applications to funding bodies than are approved. The successful applications for the year are reported in the University's Research Division's annual report

The Annual report for 2014 (University of KwaZulu-Natal, 2014, p. 111) indicated that more applications are successful in the other disciplines, especially Science, Technology, Engineering and Medicine (STEM). The College of Humanities of which Education is a School had no reported Research Grants and Contracts for 2014. Furthermore no productivity units are awarded for research commissioned by external organisations or contracts. (Singh, 2015, p. 8) Team research or collaboration also has an effect of awarding the publications units with regard to which individuals or higher educational institutions should be credited with research outputs generated by collaboration. If each country or institution involved is allocated a share of the collaborative publication (fractional counting) then the publication count will decrease. In the South African context, only those researchers affiliated to a South African higher educational institution are credited by the Department of Higher Education and Training (DHET, 2015)

This section discussed the publication history and record of the academics. The data and findings seem to suggest that academics are feeling the pressure to publish from the university and balancing that with their teaching workload. The majority of the research in the School is being done by the senior staff at the level of Professor as reported in the Annual report, but the accolades are shared by the School. But at the same time they are using this opportunity to meet the requirement by publishing in their teaching areas, publishing in accredited journals more than books or other publications and publishing in collaborative attempts with their postgraduate students, research institutes and centres and with other disciplines and institutions.

The support role that libraries play in research is central to academics in terms of their research productivity. Investment in e-resources has a direct bearing on the productivity of an institution whereby academics have constant, reliable access to e-content.

5.4 Summary of the chapter

In the biographical data, the participants were in keeping with the university data and the majority of the respondents were in the age group 50 to 59. Most of these academics were from the level of lecturer and predominantly from the School of Mathematics, Science and Technology. Academics revealed that they spent most of their time on research and worked mainly from their offices for teaching and administrative tasks. The majority of the academics were governed by *the Framework for Academic Workload* and spent a lot of time on supervision and indicated supervising a large number of Masters and Doctoral students. Information resources were used predominantly electronic because of the convenience and this allowed them the flexibility and mobility to work from off-campus. In terms of publication, most academics are responding positively to the pressure by the university to publish and conduct research and the *Annual Research report* indicates their prolific research.

The use of the library, both in terms of temporal and spatial factors revealed how academics are meeting their teaching and research needs, how frequently this information is sought, the importance and usefulness of both print and electronic resources and how information technology has been the deciding factor in where academics access this information; from the comfort of their homes and offices or physically visiting the library. Most often it is not about the library physical space, but it is about the flexibility of their work schedules, convenience, speed and time and infrastructure available to them that decides where academic tasks are performed.

These three components of the biographical data Personal), research behaviour and publications Professional are trying to create a portrait of academics in terms of library use. The whole idea of division of time, research behaviour, work spaces, resources, publications and lastly research supervision to respond to the critical question of who are they? What is their library behaviour?

Chapter Six: Engagement with the Physical and Virtual aspects of the Library

6.1 Introduction

The previous chapter concentrated on the personal and professional spaces of the academics and responded to the first critical question: who are the academic users of the library space. This chapter summarises and analyses the data collected in the survey questionnaire and interviews from the academics to respond to the second critical question: what are their understandings of this library space. It further analyses the responses to the open-ended questions.

Section D of the survey questionnaire (Questions 19 to 22) gathered data on the Library as a Physical space. This part of the survey explored the academics' patterns of library usage, probing how often they frequented the library, and what print resources were used. The interviews further probed these responses and interrogated their usage of the library. Section E of the survey questionnaire (Questions 23 to 26) gathered data on the Library as a Virtual space. Similar questions were asked with regard to their patterns of usage of the Virtual space, usage of electronic resources, their discovery and access methods for these resources. The section concluded with eliciting their opinion of the effectiveness of print or electronic resources. The interviews interrogated these responses and questioned their understanding of the virtual space and the nature of this usage. Section F of the survey questionnaire (Questions 27 to 33) gathered data on the Services and Resources provided by the library. This question tried to ascertain academics' awareness and knowledge of what services, resources and facilities were available in the library. The interviews interrogated these responses and questioned the link between the physical and virtual and how this impacted on their usage and knowledge of the library. The final Section G of the survey questionnaire tried to gauge what their vision for the library space was and how their use would change over a space of 3 years and if the library had changed over time. For the interviews, the respondents had to comment on their vision for a library space of the future.

6.2 Academics patterns of library usage

By tradition the library has been understood to be the 'heart of the institution', a place of central significance to all its users from the academics to undergraduate and postgraduate students and researchers (King, 2000). They frequented the library regularly, consulted the collections and browsed the contents of its shelves, liaised with the librarians and requested books or journal articles from other libraries, with a fair amount of time spent browsing, reading and photocopying (CURL & RIN, 2007)). But this usage pattern and behaviour changed with the electronic availability of resources. This shift can be attributed to the institutional and academic profile.

In the next section the use of the library will be discussed according to the temporal and spatial factors.

6.2.1 Temporal factors

The survey and interviews revealed that temporal factors (Atkinson, 1996; Ge, 2010; Johnson, 2001; Liu, 2008; Research Information Network, 2011) play a significant role in the academics' usage of the library and two types of time intervals have been identified and described that influence academics behaviour. Frequency or actual usage time and the second is the stage or trajectory of an academic's career or time in their life. The frequency of visits to the library by academics indicates or suggests that they are using the physical collection, facilities or services on offer. This implies that the more often they visit, the more of the collection, services and resources they are using.

6.2.1.1 Lived spaces of the academics: frequency of visits to Edgewood Library (Question 19)

From question 6 of the questionnaire in terms of services and resources it was found that academics use the library for interlibrary loans and to do research. To probe this usage further, respondents were asked to indicate how often they visit the Edgewood Library in the current year – 2012 (when the online survey was carried out) as well as in 2011 and the past 3 years.

Table 6.1 portrays the frequency of their visits to the physical library on their home campus. The highest proportion of responses were for less than once a month in 2012 (37.8 per cent) and 2011 (34.9 per cent), but the highest proportion for monthly visits was the past three years. The results show that the frequency of visits has declined over the last two years.

Table 6.1: Frequency of visits to the Edgewood Library (Question 19)

Frequency	This year (2012)	2011	Past 3 years
Daily	2.2 %	2.3 %	7.0 %
Weekly	8.9 %	7.0 %	9.3 %
Fortnightly	13.3 %	27.9 %	16.3 %
Monthly	33.3 %	23.3 %	34.9 %
Less than once each month	37.8 %	34.9 %	30.2 %
Never	4.4 %	4.7%	2.3 %

This trend was confirmed by the interview respondents. Prof Keshav explained that his frequent visits to the physical library had declined because he had remote access to electronic information which removed his need to physically visit the library. And that it only has on offer certain services that have to be accessed there and that these are not central to his research:

> So the library as a physical resource is there for you to get
> certain services. The library does not form a central role in

terms of accessing research materials. I cannot remember the

last time I visited the library. (AS2, Line 45-51, July 2013)

Dr Lakshman explained his infrequent visits to the library as*: I don't see myself coming there, I'm set up here [in my office]. (AS7, Lines 62-63, July 2013)*

This was further corroborated by Prof Keshav, on his reflexive practice that his use has diminished as his academic status and growth changed from an undergraduate student to Professor:

> *If I look at my own trajectory, in the use of library, my undergraduate studies to now as being an Associate Professor, you can see clearly there has been diminished, diminishing on my physically going to the library. (AS2, Line 235-238, July 2013)*

From document analysis (*UKZN, Library*, 2012c) it was found that staff visits are made less often per month to the library and most academics visit the library once every six months. When they visit the library, it is usually to do an interlibrary loan, borrow library material or consult with the librarians. The circulation statistics indicate that of the 95 academics based at the Edgewood campus, 1200 items were taken out on loan from the library for 2012, of which 113 were theses and dissertations. This statistic revealed that on average an academic is taking out one item on loan from the physical collection in the Library, which indicates an underutilisation of the library's physical collection (UKZN, Library, 2012c; UKZN Library, 2013; UKZN Library, 2014).

The next section will discuss the frequency with which academics visit and use the other UKZN libraries.

6.2.1.2 Lived spaces of the academics: frequency of visits to other UKZN libraries

A single campus library will not be able to meet all the needs for information and physical resources from the academics, and as the academics alluded to earlier about the interdisciplinary and trans-disciplinary nature of Education, this single campus library will not be able to meet its needs. Therefore to meet this need, an ILL service is provided or academics have the option to frequent these other libraries. The Colleges and Schools of UKZN operate across the five campuses of the University – Edgewood, Howard College, the Nelson R. Mandela (NRM) Medical School, Pietermaritzburg and Westville. Two of the campuses are 'single-faculty' campuses. These are Edgewood which hosts the School of Education and the NRM School of Medicine. Each campus is serviced by a library serving particular academic disciplines. These are presented in Table 6.2:

Table 6.2 UKZN Campus Libraries

Campus	Libraries	Academic Discipline
Edgewood	Edminson Library	Education
Howard College	E.G. Malherbe Library Barrie Biermann Architecture Library Eleanor Bonnar Music Library G.M.J. Sweeney Law Library	Humanities (Arts, Built Environment, Music) Law Engineering Public Health
NRM Medical School	Medical Library	Health Sciences
Pietermaritzburg	Cecil Renaud Library Law Library Life Sciences Library University Archives	Agriculture Humanities Law Science Management
Westville	Main Library Joe Ryan Dentistry Library (at King George V Hospital) Graduate School of Business	Science Management

Table 6.3 portrays the frequency of academics' visits to other UKZN campus libraries. The highest number of responses were for less than once a month for all three time periods, in 2012 and 2011, and the past three years. The results show that the frequency of visits has

declined by 17.4 per cent from 2010 to 2012 but by -4.6 per cent .from 2010 to 2011 and by -13.6 per cent from 2011 to 2012. Academics indicated that they do not visit the other campus libraries on a weekly basis and their visits to the home library (Edgewood) were significantly low at 8.9 per cent in 2012.

This finding is in keeping with the study done by CURL & RIN (2007) that academics visits to the library had declined by half from 40 per cent in 2001 to 22.5 per cent in 2006.

Table 6.3: Frequency of visits to the other UKZN Campus Libraries (Question 20)

Frequency	This year 2012	2011	Past 3 years
Weekly	0 %	0 %	2.3 %
Fortnightly	9.1 %	6.8 %	6.8 %
Monthly	9.1 %	11.4 %	13.6 %
Less than once each month	43.2 %	50.0 %	52.3 %
Never	38.6 %	31.8 %	25.0 %

Academics may possibly be frequenting other campus libraries to use their material instead of doing an ILL or to consult their special collection or to browse and get journals and books that are not available in their home library or their home library has not purchased the items yet. The collection in Edgewood is primarily Education and related disciplines, so the frequency of visits to the other campus libraries should be lower than to the Edgewood Library.

The interviews revealed that the possible visits to the other campus libraries may be to consult library content. Profs Keshav and Dristi, Drs Radha and Sonali related their physical

usage of other collections to the difficulty in doing an electronic ILL request and expressed the view that this did not help them.

From responses to question 19 and 20 and question 28 of the survey questionnaire, the findings suggest that when academics do frequent the library, they use it predominantly for ILL.

Prof Dristi also alluded to the multi-disciplinary character of Education and why visits to other campus libraries may be necessary:

> *Interlibrary loan in particular tells me about the interdisciplinary nature of education, about the discipline. If you do an assessment of the articles I have asked (requested), and ask how many have been education, how many are public health, loads of other subjects. One would argue then what am I doing in Education. It is precisely because of the Interdisciplinary and Trans-disciplinary nature of our work that is why we require that (those) kinds of loans. (AS1 Line 190-197, July 2013)*

As this academic has indicated, the nature of educational research has changed and has crossed over to other disciplines. As discussed earlier in section 5.4 on publications, academics are involved in research with their postgraduate students who come from different disciplines not just Education, and the collaborative research that is done with other teams at the institution or other institutions means educational research is not limited to just Education.

From documentary analysis (UKZN Library, 2012) it has been found that in the period January to December 2012, academics borrowed a total of 1030 books and 113 theses and

dissertations and 57 other items (DVD, CD, CD-Roms) from the Edgewood Library and a total of 150 books and 13 journal articles on interlibrary loans (UKZN, Library, 2012). This figure excludes the number of publications that they have sourced electronically.

The data is showing that when academics do frequent the library it is do an interlibrary loan transaction. The next section will discuss interlibrary loans, which is a system whereby academics can loan items from other UKZN libraries and other libraries in Southern Africa.

6.2.1.3 Professional spaces of the academics: Use of the interlibrary loan service

Interlibrary loans is a service or facility provided by the library to the academics and students to obtain publications, journal articles, books, materials that is not available in their institutional library or in print and forms an important part of the research support function of the library. For academics to conduct research of excellence, the library has to have the necessary research infrastructure in the form of information resources. This is an important element for the School of Education at Edgewood to uphold their standing in research. Interlibrary loans (ILL) therefore enables access to a selection of resources not held at the institutional library. According to document analysis (UKZN, Library, 2012c) academics at the Edgewood campus borrowed 96 print publications from other UKZN libraries and 54 print publications from non-UKZN libraries, or other university libraries.

Academics agreed with the notion that ILL is an essential service and has an important place in the research landscape, especially with the inter-disciplinary nature of their research. Their ILL requests reflect this new need for information from many disciplines, requesting material that is available externally, sometimes outside the borders of the country and material that is available at other institutions with their particular research scope.

Dr Radha was very appreciative of the provision of this service and its ability to speedily locate and access publications requested and commented that this service not only enables her to obtain material not in the Library, physically or electronically, but it has also widened the field of her research :

> *On the ILL issue I found that Edgewood to be very, very efficient. If there is something I ask for it is obtained within a very short time I have been able to do a lot of publishing even outside my field from this library (AS7, Line 39-41, July, 2013).*

But, on the other hand, those academics that had not used ILL were not aware that this service had improved and changed in recent years, with the advancement in technology whereby a request could be submitted online and the requested items would be sent to users via email in portable document format (pdf).

Paradoxically, Google, which has made it possible for academics to locate information from a wider range of sources, has already caused a ripple effect problem. Academics discover articles or references that are important and required for their research, but there is difficulty in accessing the full-text or the physical item and academics then have to turn to the library to request these articles via interlibrary loans. Some of these articles or references may not be available electronically or if it is so may be a subscription-based title and not freely available and this leads to ILL requests being difficult to obtain (Rowlands & Nicholas, 2008).

6.2.1.4 Professional spaces of the academics: library usage related to their Academic pathways

Antell and Engel (2006, p. 538) coined the phrase 'academic upbringing' in their research on the academic library space use at the University of Oklahoma. "Their research revealed that

many faculty members (academics) desired a faculty space in the library as a natural progression of their academic growth or what the researchers termed, their academic upbringing". The research looked at whether an academics age was linked to the usage of the physical library, and whether use was related to the generational age of the academics. The research focus was on how academics used the physical and virtual space, whether the use of the virtual space was done remotely, and which areas of the physical library they used and what was done in those library spaces. Most academics revealed that they had learnt to do their academic work during their Master's and Doctoral studies and used the graduate student carrels to do that. These scholarly spaces within the libraries are essential for the academics research productivity.

In the open-ended responses of the survey, a similar response was reported by an academic who indicated that his 'academic upbringing', started during the days of his undergraduate studies, and he was guided by the notion that 'you go to the library to study.' Their use of the library is related to their growth as academics. One of the respondents reiterated this:

> *If I look at my own trajectory, in the undergraduate programmes, we use the library for access to books, sourcing reserve material, discussion groups, kind of activity based use of the library, to now I have different conceptual use of the library. It's just very developed, the way we as individuals have grown, as academics. And promoting research in different ways, that has shifted the way we think of, and use libraries. (AS2, Line 235-251, July 2013)*

But this academic reflected that her 'academic upbringing' was related to the stage she was at in her academic life, and the formative training she received in the traditional library:

> *I think for academics it depends on where you are in your academic life, in terms of, at what point can you say you can reflect upon this and decide(d) that you need the library in (a) way(s) that is traditionally known, from your early days. The*

path is about increasing and elevating our standing. (AS1,

Line 76-80, July 2013)

There are two types of time intervals that influence academics library use. These responses by academics perhaps indicate that their infrequent use of the library can be attributed to the content of the library collection and being able to access it from their offices. Their current usage was largely determined by their experiences as a library user from their time as undergraduate students progressing to their current position as academics who have to nurture and train their students, especially postgraduates undertaking research.   The document analysis also backs this up and indicates that the usage is low of their home library and usage of other libraries is mainly for interlibrary loans.

The academic library use trajectory suggests that in their undergraduate years, the emphasis was on the physical space and the resources available in print but as they have developed as researchers and academics, their use has shifted to the office space and to using electronic resources.

In the next section the physical use of library space will be discussed.

6.2.2 Spatial use: Physical

In this section the use of the physical space will be discussed. Academics construct spaces by establishing certain behaviour patterns or habits and practices in those spaces. Academics construct the library space by doing certain things in certain ways.   Their behaviour in that space gives an indication of what it is used for and what their understanding of it is.

6.2.2.1 Professional spaces of the academics: Use of print-based resources of the Library

There are wide ranges of print-based resources still available in libraries. The pervasive availability of electronic information is relatively recent, until the 1990's academics had to access print-based sources. Question (21) in the survey questionnaire tried to ascertain that if academics were coming into the physical building, what resources they were using and how useful these were to them as researchers.

The options that were given to respondents were : special collections in print, like the Education Policy Unit publications which are policy documents, ephemeral items of the policy unit; library-specific collections like the short/restricted loan collections, reference books and archival material; the general and subject-specific indexes or databases or citation databases in print which would list bibliographies and references in the subject; and finally the more commonly known items like the books and journals in print – current and back issues. The four sources that were predominant in terms of preference were: current issues of journals in print and the back issues of journals in print, books in print, and Citation databases in print, e.g. ERIC.

Dr Sonali revealed that her preference is for the print resource even if a book is available electronically possibly because it is easier to handle, compared to reading it on a laptop or desktop computer and sometimes the graphics like pictures and text are difficult to view based on the resolution and capabilities of your computer. Using the print resource also allows her to browse other texts in the library at the same time:

> *Because you want to read up on some of the journals, and sometimes you want to look for books. … you are doing a paper and you need some more information, so you want to look at the book. You don't want to look at the electronic (version). (AS3 Line 43-47, July 2013)*

Figure 6.1: Usefulness of print-based resources provided by the Library (Question 21)
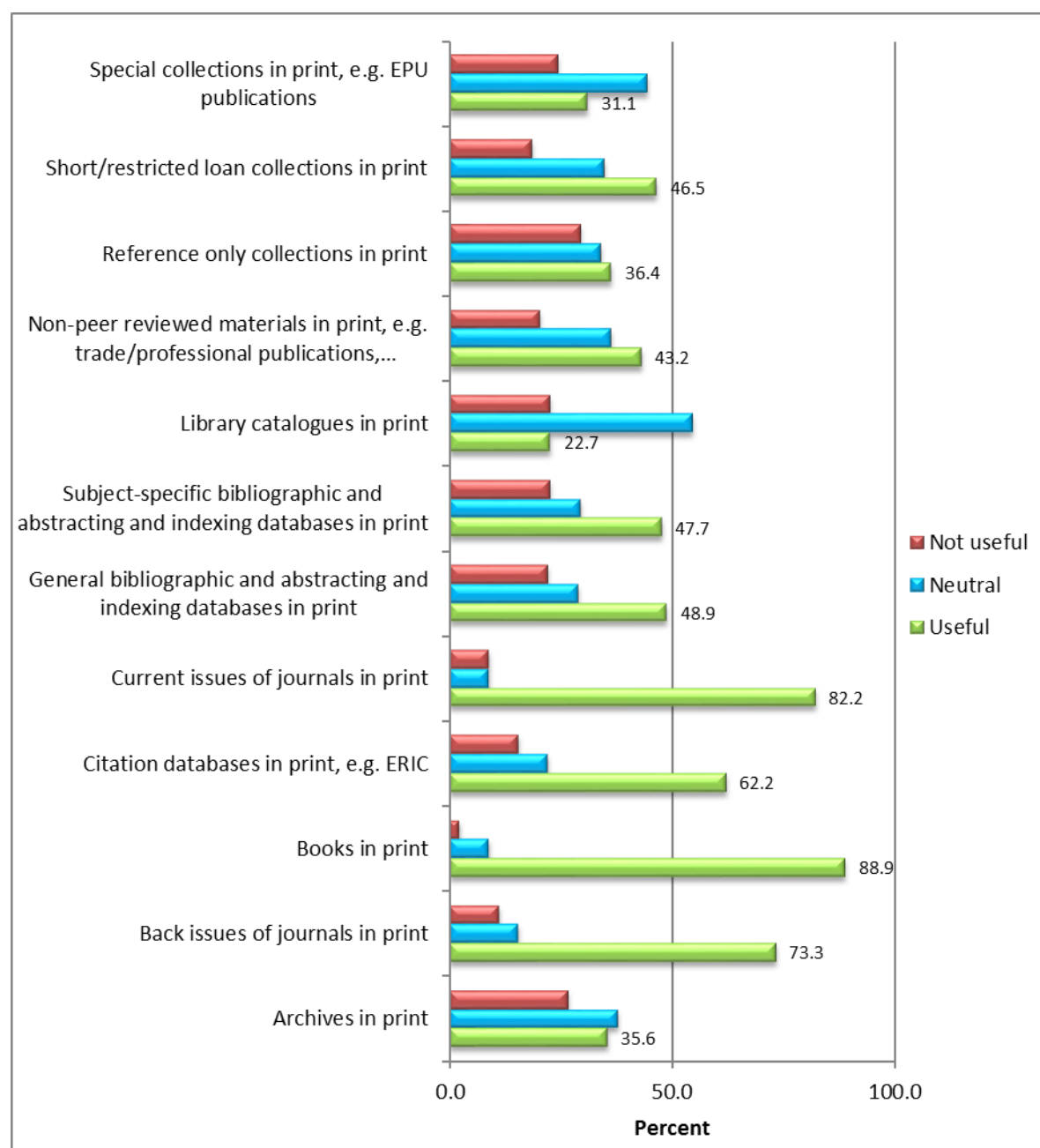

Figure 6.1 illustrates that in the physical space of the library, books in print had the highest percentage of 88.9 per cent of users followed by the current issues of journals at 82.2 per cent and 73.3 per cent for back issues of journals. The library catalogue in print had a low percentage of users (22.7 per cent) because it is also available online and will only be used if the online catalogue is unavailable. The information in the printed catalogue is also only current at the time of printing. The other low percentages were 31.1 per cent for the

special collections and 35.6 per cent for the archives in print indicates that unless academics are doing specialised research, these resources will not be useful. The indexes and databases are also available electronically and have many more searching and browsing capabilities than the print. These responses for usefulness of print will be discussed further in point 6.2.3.5 when participants were questioned on the effectiveness of the print and online material.

When the usefulness of print-based resources were explored further in the interview, two academics reflected on the demise of the library as a storehouse of print, especially of the book. This was verified by the interview data. Prof Dristi stated that the space for the print book is diminishing because of the availability of the electronic book (e-book):

> *The change I can eventually see the space for books also dying, I am not saying that in the next 10 years or 20, probably in the next 200 years we might not need spaces for libraries the way we have. For sure entire books will be available electronically, I sometimes do like to read a hardcopy, but it is not too often. (AS1, Line 183-189, July 2013)*

A number of studies done in libraries revealed that the statistics for print was declining against the statistics for electronic resources. Studies by Ge (2010) at the University of Tennessee, US found that as a result of the availability of electronic resources, searching for information in the social sciences and humanities disciplines were affected. This was reiterated by Martell (2007, p. 437) at the California State University, State University of New York, University of Maryland (ARL members), and other libraries that examined circulation statistics like the open shelves, short-loan and reference transactions which was a traditional output measure. Dendrinos (2005, p. 2) looked at how users have moved from a physical reality to a virtual reality in the library environment and Kachaluba, Brady, & Critten, (2012) conducted an investigation into academics and their attitudes towards the advantages and disadvantages of electronic versus print resources for the Humanities

scholars at Florida State University (FSU) . They found that academics preferred electronic over print and that there was an increase in its usage. The study done by Armstrong and Lonsdale (2009, p. 35) to gain an understanding of how e-books are used by academics and students in 127 UK universities revealed that e-books were primarily used to access brief information facts. The printed book is still the preferred format. Their study found that there were a number of reasons for that, namely   e-books were difficult to navigate with the scrolling and next-page button, lack of choice of available published e-text books, as well as the number of external links that possibly distracted readers. A significant finding was that academics did not actively promote the use of e-books as they did not possess the skills to locate and select new titles. E-journals were popular amongst academics but this development and acceptance of e-books had not reached the same levels (Armstrong & Lonsdale, 2009, p. 35). But at the same time these academics valued the convenience and added-value features like multimedia, interactive exercises and illustrative material of e-books.

This diminishing need for space for the print and the modern mode of technology was reiterated by Prof Keshav:

> *with the explosion of communication networks and tools and*
> *communication and getting information, searching the net*
> *has gone far beyond the physical environment of a space, a*
> *physical space. (AS2, Line 35-37, July 2013)*

However his take on print material is that for it to be useful and valid, it has to be current and freely available and with print publications taking a while to be published and made available, journals have somewhat the edge on books especially when it is available full-text online. He is suggesting that if books were made available online as speedily as journals, it would be useful to his research and students. His response also suggests that he is more concerned with the accessibility, interactivity and mobility than with the physical print item.

> *The explosion of knowledge is largely been facilitated through publications in journals, that are quite extensively available on the Net. (AS2, Line 202-203, July 2013)*

This academic also reiterated that the format of the publication is a factor because students are requested to access current and up-to-date research, and specifically the last 5 years. And he revealed that he prefers journals over books:

> *And that seems to be pushed by researchers, like us, we would say to students get the more recent publications and those done in the last 5 years. Your review of literature, should be in the last 5 years. You then will be able to access journal articles that are published in the last 5 years. That is the most available, kind of source of knowledge (AS2, Line 68-71, July 2013).*

This academic places emphasis on the currency of journal articles, especially those that were published in the last 5 years, compared to books that are once-off and not as periodically as journals. A possible reason for this is that journals is published periodically and therefore the content is more current and up-to-date. Journals are also published in general areas as well as a in a specific subject area with an extensive range of topics when compared to a book, whose information dates faster and usually covers a single or a few topics. This response is corroborated by the library's strategy (UKZN Library, 2013) to spend more, 70 per cent of the materials budget on journals against 30 per cent for books, whereby the majority of the funds have been spent on journals because their costs and quantities (number of titles) have changed significantly. As a result the expenditure on books has dropped whereas expenditure on journals has risen sharply because they are much more expensive. Dr Tash's (AS4, Line 192-193, July 2013) comments on the cost of books and journals indicate that academics are aware of the dilemmas between print and online and that the UKZN libraries are cancelling their print journal subscriptions for more electronic access to journals on their desktops: "*If you take books, for research, they get*

outdated quickly, so you *need much (many) more journals and we know we cannot afford much (many) more journals".*

Dr Radha was more forceful in her response on the demise of print and the library. She displayed an emotional attachment to the library:

> *I would be devastated if the library became non-existent. I think as an academic who has been trained in a particular era, there is an attachment to books. Books can be downloaded and read for free. But the connection with the physical is such a special thing. I do not do Kindle, although I have access to it. (AS7, Line 104-111, July 2013)*

This academic displayed an awareness of e-books and of the reader required to use it, but her preference was for the print. She revealed that she has an affinity for the printed book, suggesting that this attachment dates back to her days as an undergraduate when e-books were not available.

Oppermann and Jameson (2008) in their study of library and material-use statistics collected continuously over an eight-year period along with data from a user exit survey, found that North American academic libraries have experienced falling rates of in-house use, circulation, and photocopying – but these libraries have not necessarily experienced a rising gate count. Gate count refers to the number of users that enter the library building and have to pass through the entry gate which could be a turnstile or swing gate that keeps a record of users entering. Their study also reported that the Statistics from ARL demonstrate a declining trend of circulation and of in-house material use among ARL libraries.

This section discussed the preference academics have for print material and their usage statistics indicate that they find this useful. They acknowledge that e-books may take over and replace print books but that this will not be for a while and that their attachment to the print version will still be present. But at the same time some academics felt that print does not offer the currency, interactivity and mobility as much as e-journals and journals. The library budget also indicated that more of their funds are spent on the electronic than print and academics are aware of the rising cost of journals.

The next section will discuss the library as a physical space and whether it has value and importance in the academics personal and professional lives. And why this is so.

6.2.2.2 Professional spaces of the academics: shifting patterns of use of the physical library space

At the interviews, academics were asked as most were using the electronic resources from their offices and come in very occasionally to get something in print, and that nothing has changed in the library in the last few years, what their opinion was of the physical library space. When asked this question, academics agreed to the fact that, practically, there is still value in the library as a physical space. Academics reiterated that libraries as physical space was an important component of the university setting and that they had their uses for research and study, otherwise its physical presence was largely taken for granted.

Academics' use of libraries has shifted and it was strongly affected by the availability of electronic resources, and by other factors as well. The traditional role of the library as a place in the academics' professional life has shifted and brought with it a different place from what it had usually been. The traditional library comes under pressure. The traditional academic library had been predominantly collecting and preserving text-based scholarly literature, but with the changes in information technology, there are now different

ways in which scholarly literature is organised, found and published. This applies to both the old text-based literature and the new online literature.

Luce (2008) writes about the traditional library and how research libraries have to move from collecting, organising and preserving scholarly literature to making it accessible in this digital age. Various writers (Bazillion & Braun, 1995; Borbinha, 2002; Prasad & Swarnalatha, 2005; and Lancaster & Sandore, 1997) describe the traditional library as a 'storehouse of information', of bricks and mortar where books were kept on shelves and librarians were involved in the acquisition, processing and preservation of library material.

Most of the academics cited various reasons, in the open-ended question (Question 33), in the survey questionnaire and in the interview, why they do not come into the physical library. What this data is suggesting is a paradigmatic shift in the use of libraries from it being a place where academics seek assistance with their information-searching skills or for actually using it to find information, to a space that is used predominantly by undergraduate students (Noise 28.8 per cent), so much so that there are fewer academics who visit the library because they feel it is crowded and there is limited space (11.1 per cent), Opening hours not suitable (8.8 per cent); Old building and lack of adequate seating and study space - 4.4 per cent, and academic feel that the space is not welcome to their needs. Adding to this paradigmatic shift is the accessibility of a wide range of resources from their desktop. Academics are using their office space as their professional space. Of benefit to the academic is the independence to conduct their own information searches whereas before they had used a librarian as an intermediary. Of significance is the instantaneous access to a range of subscription-based journals as well as freely available electronic sources of information (Lack of modern, IT equipment -4.4 per cent). Responses to the open-ended question also revealed that academics avoid the library because of the following inconveniences outlined in 6.2.2.3 below and that the library lacks recent books and journals - 13.3 per cent.

6.2.2.3 Professional spaces of the academics: importance of physical resources

In the questionnaire on the importance of physical resources, question 29, the survey results pointed to 5 main offerings of the physical libraries. Firstly an up-to-date and relevant book and journal collection, secondly a place for quiet, individual study, with the provision of modern IT equipment, fourthly convenient opening hours, suggesting opening hours that are longer than the working hours of 8.00 in the morning to 16:30 in the evening and finally a place to browse through the current printed journals and books.

Academics responded in the survey that they would like to be able to work in the library and consider it a valuable physical space. But with the current conditions in the library, this is very difficult for them to do. The issue of the noise is a major deterrent for academics, because of the usage of cellular phones and the noise generated by conversations, discussions and group work. The library is not a conducive and appropriate environment for academics to work in quietly. Academics are not using the physical space for the facilities and services but rather for the collection and expert assistance of the subject librarian and therefore an environment that is conducive to those facilities is required.

Prof Keshav states that this element of quietness is important for an academic:

> *Because for me, the kind of quietness that I need, the facility*
> *to read, the time to read [is not there]. That is exactly what*
> *academics are about, the thinking, reflecting, representing*
> *their thoughts by writing. (AS2, Line 18-19, 27-28, July 2013)*

As this academic has illustrated, the physical environment is an important issue for academics. Academic work requires the space for quiet, contemplative work where they are able to concentrate and work without interruptions. Academics require exclusive space in which to do this contemplative work that the physical space of the library and the

undergraduates cannot provide. Figure 6.2 displays the importance of the physical resources in the library.

Figure 6.2: Importance of physical resources
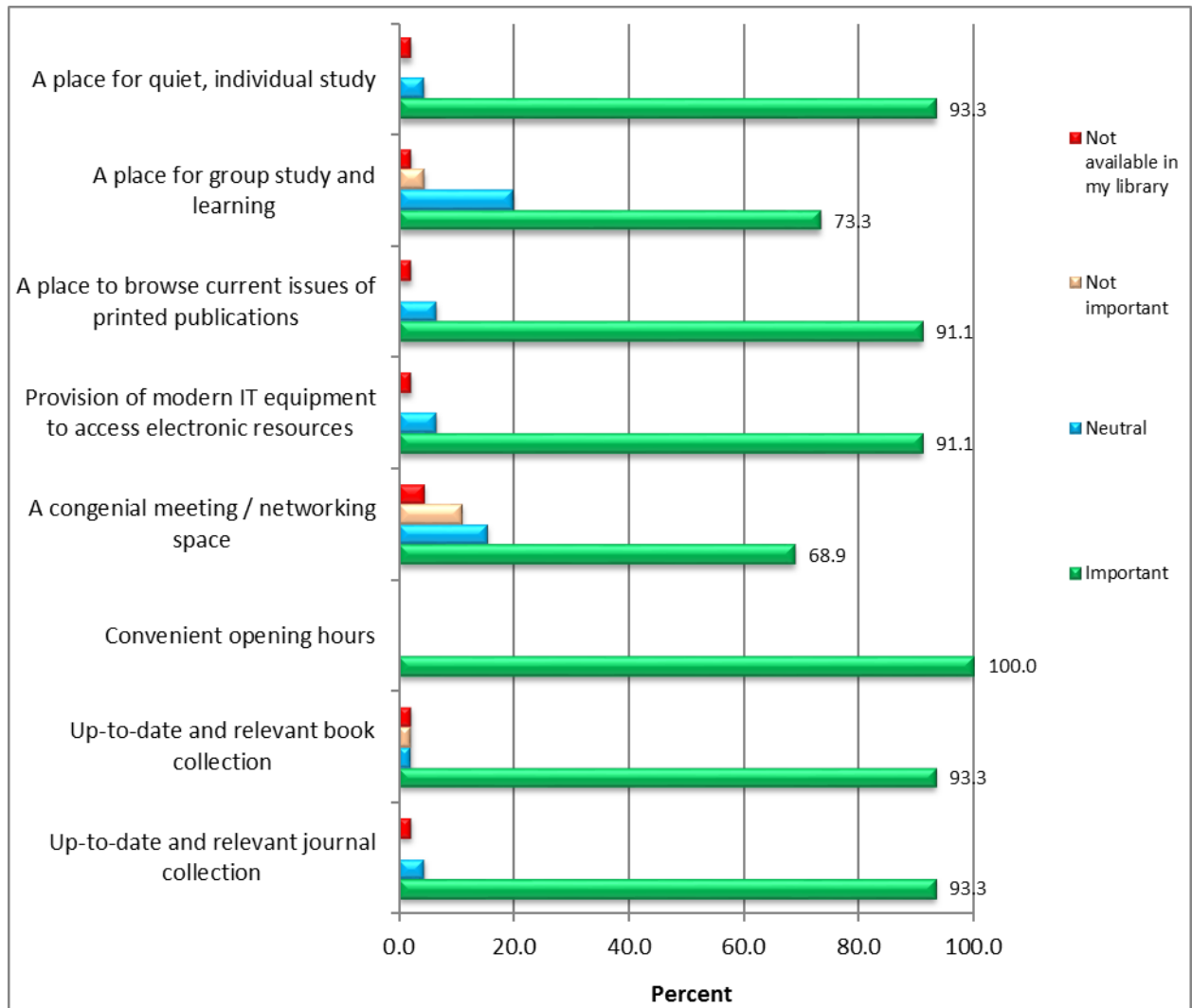
The average level of importance of what physical resources should be in the physical space were the following: Convenient opening hours, 100 per cent, followed by a place for quiet, individual study - 93.3 per cent, Up-to-date book and journal collection, 93.3 per cent. These responses are significant because academics have revealed that they value a current collection but also require the physical space to be conducive to study and to browse this collection (91.1 5 per cent) with modern IT equipment (91.1 per cent) and the opening hours were most significant indicating that when they do feel the need to visit the library, it

should be open. The responses revealed that presence of sophisticated information ttechnology may not remove the need for physical space for learning.

When asked in the interviews what their conceptions of the physical space were, two respondents in the open-ended question had this to say about the space and the need for change:

> *The physical structure has to expand. The number of students*
> *has increased substantially and the yet the library space has*
> *not had a commensurate expansion.*

This academic lamented that the physical space of the building was not keeping pace with the growing population of students and this had an influence on how the space was viewed. As a result of the merger between the College and the University, the number of students has increased dramatically.

> *A larger physical space where students can study is required.*
> *Our library is small for the student population as a result as a*
> *staff member, I do not feel comfortable to visit the library*
> *and stay there. Rather I go to visit the inter(library)loan*
> *librarian and subject librarian or other libraries within the*
> *university.*

And another academic concurred that as a result of the space being insufficient for students, he would only frequent the physical library for the services that are available there like interlibrary loans and the expertise of the librarian or even frequent one of the larger libraries at UKZN. And the survey data suggested that academics found that a place for quiet, individual study (93.3 per cent) was more important to them than a place for group study and learning, (73.3 per cent). With these increased student numbers this is not possible in their home library.

For postgraduates that are also engaged in research and require a similar space, a designated space, the Research Commons had been created in 2012 at the Edgewood library. This is a large, space that is dedicated space to Masters and Doctoral students and has physical resources that include 30 computer workstations, that has up-to-date computer applications software such as word processors, electronic mail, bibliographic software, Internet browsers, printing and scanning equipment and access to extensive online resources. It also has wifi access, an electronic classroom that can seat 20 users, a conference room as well as a lounge for discussion and relaxation (Library, 2012). The purpose for the Research Commons was to provide access to the library services and technological infrastructure so that postgraduates could engage in research that was multi-disciplinary and would support the research endeavours of the University.

Academics where asked in the interview about their usage of this physical space and Prof Keshav acknowledged that initially he thought it would not be used, based on his own usage of the physical library, but admitted that a space was required for postgraduates for contemplative research:

> Last year because of the accessibility, I was hesitant about the space, but what () we are encouraging them [postgraduate students] to do is to create a culture amongst students to be in the space that promotes research. It is important to have a physical space to support that as well (AS2, Line 229-232, July, 2013).

It is a quiet, reflective space that allows postgraduate students to engage in thinking and in an uninterrupted environment. The Research Commons is one central point where postgraduate students have access to all the library services and electronic resources made available by the University such as specialty academic software packages, such as statistical

software packages like SPSS, NVivo packages and referencing software such as EndNote and Zotero.

The issue of the physical space is not only dependent on print-based resources available, but its currency, relevancy and frequency and therefore would prefer more journals that are published frequently and readily available on the Internet. But the environment in which an academic works is also important and the physical space is then a significant issue in whether it is used or not.

The next section will discuss the use of the virtual space of the library.

6.2.3 Spatial use : Virtual

The survey questionnaire revealed quite clearly that academics appreciate the convenience of accessing electronic information resources from anywhere and anytime but also that there are a number of possibilities with that information resource. Of major significance is the ability to view, download and print articles, speedily and with little effort required on their part.   Various terms are used to describe where these electronic information resources are available. The term 'electronic library' appeared in the literature and was used in mid -70s, the term 'virtual library' appeared in the 1980s, and the term 'digital library' is the most recent and popular. The term digital library was popularised by its relation to the World Wide Web (WWW). In most cases, the 3 terms are used synonymously. The difference between the electronic library and digital library, is that electronic library is usually a group of digital resources. Dendrinos, (2005, p. 2) states that a "virtual library can also be seen as a part of a digital library, as it is a library that is independent of any locations and is a library without walls". The electronic library has both electronic resources and conventional parts, or could be an automated library or a library with computer assistance (Dendrinos, 2005, p. 4).

For purposes of this study and discussion the term 'virtual library', shall be regarded as a collection of digital material or electronic resources (like databases, e-journals, e-books) that is not limited to a particular physical location and is independent, and offers a number of combined services with a single standardised user interface (Lancaster, 1997). Academics responses to the survey and interview suggested that they understood the virtual library to be resources and services that were available electronically, on the Internet and WWW, both subscription-based and those that were freely available.

The next section will discuss the points from where academics' access electronic information.

6.2.3.1 Virtual use of the Library: use of electronic information resources

Respondents of the questionnaire (question 22) were asked to indicate from where they access electronic information, the percentage of use of the online and print resources, how useful the resources were, search and discovery methods used to find electronic resources and between print and electronic which was more effective.

Academics access the Internet and WWW to search electronic resources like databases, journals, books and to search engines like Google and Google Scholar and these resources play an integral role in the research process. This data is presented in Table 6.3.

Table 6.3: Access point for electronic information (Question 22)

	Primary	Secondary	Do not use
From my office	80.0 %	20.0 %	0 %
From home	32.6 %	55.8 %	11.6 %
In the Edgewood Library	9.3 %	41.9 %	48.8 %
In the local public or other library	4.5 %	6.8 %	88.6 %
Elsewhere in the School	2.3 %	29.5 %	68.2 %
In other UKZN campus Libraries	2.3 %	29.5 %	68.2 %
Other	0 %	18.6 %	81.4 %

The survey results indicated that 80 percent of the academics used their offices as the primary access point for electronic resources. The results indicate that more than half (55.8 per cent) used their personal space, their homes as the secondary access point. A significant few (9.3 per cent) access the resources from within the library. The data is suggesting that the primary places of working are at the office or at home. The interview responses for all eight academics corroborated this finding. The excerpts below from the interviews illustrate this clearly:

Prof Keshav indicated that the office was the 'home' of the academic or the base where all activities were performed because of convenience, access to facilities and technology and the online or virtual access made this possible:

> *Basically the office is the home of the academic, because access is available for things like the Internet connection, telephone, printer, communication devices and so forth. So for me the explosion of the technology has created*

opportunities for people to be virtual (AS2, Line 1-3, 119 –

123, July 2013).

Prof Mbali highlighted the convenience and speed of the Internet at the office compared to his access at home which decided where he accessed the electronic information:

I use the office and my computers – it is hooked to the

wireless and the landline. And much of my library searches

are done here, using the Library databases, Google Scholar. I

do very little at home and it is much quicker here. (AS7, Line

20 – 23, July 2013)

Technology seems to be driving the choice for the location of where they are accessing electronic information. The convenience of accessing a myriad of resources from their offices where the necessary infrastructure is available, makes the office the space that academics access the virtual library. The virtual library allows the academic to obtain resources traditionally provided by the library, without visiting the library or consulting a member of staff. This reflects a change in the academics behaviour whereby they can access that content from the comfort of their offices and the decision is only on what format and content they need to access.

Dr Sonali stated that:

If I want to go into Google Scholar or want to go into the

library things [resources], I would come in to work. I would

usually come in, if I need to search or do a literature review.

(AS3, Line 72 – 73, July 2013*)*

An academic has the flexibility to perform his duties at home, the office or any other location as long as their workloads are completed. Refer to point 5.2.2 on the *Framework*

for Teaching Workloads, whereby the ratios of average academic time for teaching is 45 per cent; 40 per cent for research, 10 per cent for community engagement and lastly 5 per cent for administration. As long as these norms are adhered to the academics can decide the location of their workspace.

Levine (1997, p. 10) states that there are a number of factors that are changing the way in which academics perform their duties: "firstly the changing attitudes, characteristics and demands of higher education's patrons, namely the students and postgraduate students especially; secondly the changing conditions of employment in higher education which are driven by research targets and performance and thirdly the rise of new technologies which has a direct impact on how they access the library and other administrative resources". The study done by Jacobs and Winslow (2004, p. 104) on the statistics of the U.S. Department of Education's National Centre for Education revealed that: "the ways in which academics work spills over into the rest of life, and that long hours on the job are expected far in excess of the forty-hour work week that was established as the national standard (in the US) more than sixty years ago". The study also revealed that this pressure is self-imposed especially for those academics who want to do research and publish and do most of their reading and writing at home or in the office.

One academic stated that academics select the accessibility and convenience of being able to access information over the worth of the resource and says:

> *But if one goes around today, here, this very moment, academics are not around. One is assuming that they are doing what I'm doing. My past would have been a life of coming here just before 8 or 7.30 and working through 7 pm and then not going home and stopping, because when I go home I continue (AS1, Line 113-119, July 2013).*

Academics are mostly absent from the institution to conduct their research, but would come in to teach, consult with their students, attend to administrative tasks, like meetings, and occasionally stopover in the library. Academics have the flexibility and mobility to work from home and are choosing to do so and to fit in with their lifestyles and that is the most suited to them. But at the same time the work day is not confined to office hours, which is usually between 8:00 in the morning and 16:30 in the evening. Academics continue to work well after this time even consult with their students at home.

Previously academics were confined to their office spaces to conduct their research, teaching and administration but with the new technology and its capabilities, these tasks can be performed anywhere. The academic is becoming a globalised academic with a different work ethic that can work from wherever there is technology available which can be accessed on their cellphones and computers and they have constant access to their emails and information resources.

In light of this pervasive nature of technology, the next section will discuss the usefulness of electronic resources.

6.2.3.2 Virtual use of the Library: usefulness of electronic information resources

This question in the survey questionnaire (Question 24) tried to ascertain how academics find information electronically and to indicate the extent to which this is useful to them as researchers. The library facilitates access to a number of finding aids and electronic resources through subscriptions, open access and freely available content to assist researchers in finding the information they need.

From the document analysis (UKZN Library, 2013) the usage of the Library's electronic resources were high when compared to the circulation of the print material. The figures from Google Analytics (2013) indicate that the library website, the Institutional repository, ResearchSpace and electronic resources like the e-journals and databases usage have increased, with the database EbscoHost reflecting a 67 per cent increase in usage (*UKZN, Library, 2012b).*

According to the Annual report (2013) of the UKZN Libraries in the period 2011 to 2012, there had been a drop in the circulation of books which had declined by 15.5 per cent compared to a significant increase in the usage of electronic resources, especially full-text resources. The statistics suggest that in-house use of library materials is declining. The statistics indicate that there have been an increase in the electronic downloads, rising by 35 per cent, implying that users are accessing more electronic material and a wider range of materials.

The interview data revealed that there is a tendency on the part of researchers to access finding aids that are known to them and yield some results. Dr Tash suggested that there are certain websites that she bookmarks and consults these whenever she requires information:

> *There are certain websites that can get you specific encrypted articles and make it (them) available to you, therefore I would start with that, especially if I need that information quickly. (AS4, Line 195-197, July 2013)*

Full-text access to the e-journals seems to be most useful and critical for their research. Electronic journals – both current and back issues were found to be most useful to researchers. Pather (2004, p. 127) in her study on the usage patterns of electronic journals amongst academics in the then Faculty of Science at UKZN found that usage patterns have changed and favour the use of e-journals. Academics reported that they preferred e-journals because it provided access to full-text, was easier to search and access online. The

study by Tenopir (2003, p. iv) of the 200 research publications that were published between 1995 and 2003 found that use is very high when the e-journal is available as part of the library subscriptions. In addition the convenience of access from the desktop is an important issue and that significantly this saves them time and usage was calculated to be about 15 minutes per publication and on average about 20 hours per year for each academic. Tenopir, et al (2003) showed in their study that 'a particular library supplied 95 per cent of the journals in which their academics published in, and 90 per cent of the citations were available in the campus libraries.'

A study conducted at Drexel University (Tenopir, King, Montgomery, & Aerni, 2003) on the costs of electronic journal provision revealed that there are significant changes in the costs associated with staffing and operations as well as with hardware, software and systems. The cost of processing e-journals is less than print journals but there is an increased cost in system maintenance, license negotiation, and printing.

Table 6.4: Usefulness of electronic resources (Question 24)

Item	Very useful	Useful	Neutral	Not useful
Current issues of electronic journals	71.1 %	24.4 %	4.4 %	0
Back issues of electronic journals	64.4 %	22.2 %	8.9 %	4.4 %
Institutional repositories	44.4 %	40.0 %	8.9 %	6.7%
Bibliographic and abstracting databases, e.g. ERIC	37.8 %	44.4 %	15.6 %	2.2 %
Library website	35.6 %	35.6 %	22.2 %	6.7 %
Electronic books	35.6 %	24.4 %	33.3 %	6.7 %
Library catalogues	33.3 %	26.7 %	33.3 %	6.7 %
Subject specific portals	31.1 %	37.8 %	20.0 %	11.1 %
Subject-specific bibliographic and abstracting databases e.g. ScienceDirect	28.9 %	44.4 %	17.8 %	8.9 %
Institutional Repository (ResearchSpace) for disseminating your work	26.7 %	42.2 %	22.2 %	8.9 %
Citation databases e.g. Web of Science	26.7 %	42.2 %	24.4 %	6.7 %
Catalogues or OPACs (Online Public Access Catalogues) of other libraries	22.2 %	33.3 %	33.3 %	11.1 %
Library portal (Primo) to access many different resources	20.0 %	48.9 %	20.0 %	11.1 %
Electronic reference works	8.9 %	33.3 %	44.4 %	13.3 %

This statistical usage figures are in keeping with the responses reflected in Table 6.5 above indicating that the current issues of e-journals are very useful, at 71.1 per cent, followed by back issues of the e-journals, 64.4 per cent. The usefulness of the other electronic resources are not as significant.

The majority of the responses to the open-ended question (26 or 57.7 per cent) in the survey questionnaire revealed that it was ease of access for their usage of e-journals:

> *I have moved from browsing journals and new editions of journals and photocopying to full internet online access.*

The academics indicated that the preference was shifting from accessing material rather than printing or photocopying:

> *So I do not need to access library except for books. I used to visit regularly to access latest print journals in my field. These are no longer kept in print form so I do not find reasons to pop in as often.*

The ease and convenience of use of electronic resources also removed their need to visit the physical library:

> *I use electronic resources first rather than going to the library to look for print items. It is easier now to obtain electronic copies of articles so I spend less time looking through print journals. Yes, electronic access to journals is vital and that is through the library.*

But the issue of currency of information is also a factor in the choice of resource being used. This requirement for the electronic source is in keeping with their requirement for the print resource – currency and having up-to-date information.

Responses to the questionnaire (Question 26) illustrated that academics felt that electronic information resources were very easy to use and access and preferred the convenience of saving a reference or the information and printing at their convenience. These resources also have powerful search capabilities.

Various studies cite the convenience, accessibility, and readability of e-resources, the study by Kuruppu and Gruber (2006) on the information-searching techniques of academics at the Iowa State University Library in the US, found that with the dearth of information academics were finding difficulty in using the resources and convenience and saving their time were major factors in using e-resources. The study by Zha, Li and Yan (2012) of four Chinese academic libraries suggested that academics found electronic resources easier to use and provide quick and easy access to the journals and, significantly, that most academics were influenced by their positive experiences with Google and Google Scholar as a 'one-stop shopping' point.

The data in the survey and interviews are consistent with the literature on what academics see as the benefit and advantages of e-resources. Academics responded by stating that: *I find online resources more effective for me because it is easy to file and retrieve in my personal database for use and re-use as opposed to storing printed articles and a reduction in paper consumption; and it is possible to print a selected page/s, a table/graph/illustration, etcetera if necessary* (Respondent 8). The convenience of using electronic devices for communication was an important aspect for this respondent: *Online can be filed on computers at home and work, and emailed to postgraduate students. generally easier to locate than looking through a pile of paper articles* (Respondent 22). But the comfort of the home was an important element for these respondents: *Online resources are more effective as they are accessible and easy to use in the comfort of one's own home or office. While writing one can reference the electronic sources without leaving the computer where one is writing* (Respondent 26); *Easily accessible and stored and portable and save on paper and costs* (Respondent 29).

Most electronic information resources can be accessed anywhere, anytime by those with the necessary infrastructure like a computer and Internet access, and respondents appreciated this element (Jankowska, 2004). According to respondents 8 and 27 of the survey, they appreciated the speed and ability to search electronic resources: *It (takes)is less time consuming than accessing a library; speed of access; easily searchable* (Respondent 8); *Easily accessible from any location and faster access to information* (Respondent 27), But for respondents 9, and 18 they favoured the perpetual access to the resources and not being limited to the opening hours of the library: *Online resources are available at all times - one is not restricted to hours during which a library is open*. Respondent 9 stated that: *it saved time and costs and could be consulted for perpetuity.* Respondent 31 suggested that: *Online because it is easy to access and to copy save for future* and respondent 18 concurred that: *Online saves time and provides an opportunity to have permanent copy as opposed to find in library followed by photocopy is time-waster.* According to respondent 18 and 24: for electronic resources: *searching is so much better and can be saved to computer, can be filed on computer at home and work, for use and re-use and can scroll multiple pages, ease of location of specific parts of the text.*

One of the major responses revealed in the open-ended questions was the importance of the electronic facilities. A recurring theme from the qualitative responses is the convenience of electronic access to library resources.

One of the survey respondents felt quite strongly about the effectiveness of the online and its multimedia capabilities and had this to say:

> *"I find online resources more effective for me; reduction in paper consumption; possible to print a selected page/s, a table/graph/illustration etc. if necessary. The content of articles may be in colour, have dynamic content e.g. video clips, simulations, sound files, animations".*

This section revealed that in practice and in reality, academics are selecting what is convenient.

6.2.3.3 Virtual use of the Library: importance of the electronic resources

In response to the survey and interviews academics confirmed that they will choose the resource that they are most familiar with and know and therefore trust even though there are number of discovery and finding tools available. Furthermore they would choose to use that tool which yields an acceptable number of results. This is so because there are limitations to the range of tools and Google delivers an acceptable and satisfactory set of results.

Table 6.5: Discovery / Finding tools for electronic resources (Question 25)

Discovery tools	Very important	Important	Neutral	Not important
Alerting facilities and discussion groups	4.4 %	37.8 %	37.8 %	20.0 %
Subject mailing lists or listservs	6.7 %	33.3 %	42.2 %	17.8 %
Library online catalogues	35.6 %	40.0 %	15.6 %	8.9 %
Bibliographic databases, abstracting and indexing services, e.g. Sabinet	31.1 %	28.9 %	31.1 %	8.9 %
Pre-print archives	2.2 %	22.2 %	60.0 %	15.6 %
Personal portals	8.9 %	33.3 %	42.2 %	15.6 %
Institutional or departmental gateways/portals (maintained by e.g. library)	22.2 %	37.8 %	31.1 %	8.9 %
Subject gateways/portals (e.g. Resource Discovery Network)	13.3 %	35.6 %	44.4 %	6.7 %
Google or Google Scholar	86.7 %	13.3 %	0 %	0 %
Search engines	75.6 %	17.8 %	4.4 %	2.2 %

Van Orsdel and Born (2006, p. 39) report that Google has relentlessly '"strengthened its claim as the doorway to the web and all of its contents, including scholarly content". The results of the survey shows that over 86.7 per cent of researchers use Google or Google Scholar to find scholarly content almost similar to the report by Van Orsdel and Born who

found that Google was used as a discovery tool and was responsible for referring 56 per cent of the users to the journals of the publisher HighWire.

The RIN discovery services study (2006) also revealed that users believed that, 'if Google does not find it, it does not exist.' This comment was confirmed in the interview responses almost all survey respondents demonstrating that they find Google and Google Scholar as essential and that this is the starting point for most of their research. Yet the subject gateways or portals, including the Institutional Repository was low in importance as a search and discovery tool.

The findings of the study done by Haglund and Olsson (2008, p. 55) revealed that:

> "for many researchers, especially in the sciences, Google is the first choice for information, all kinds of information. The researchers use Google for scientific information, looking for everything from methodological information to ISSNs, and some even state having moved from subject- specific databases to Google (and Google Scholar)".

After typing in a few words in the search box, they are presented with thousands of results, all within a few minutes. The study is suggesting that these researchers found the information they were looking for and it was good enough to answer their research questions. Google Scholar was only known to a few researchers".

Prof Dristi revealed that the pathway she follows when accessing electronic full-text reference from home is via the Virtual Private Network (VPN) client, which ICT has setup. This infrastructure provides an entry to UKZN network servers and systems from an off-campus or remote computer using the CISCO VPN client, which ensures that the user has a

secure connection and is able to access the UKZN network with full functionality as if you were on-campus. She proceeds as follows:

> *The first* thing I do is go to Google Scholar, looking for whatever author. But this does not always work, the home access, VPN. For everyday use I use off-campus access to Google Scholar and I'm successful with it. I am not familiar with Primo and Swetswise and do not use it. And there maybe other resources such as Scopus that I am not accessing. (AS1, Line 289-306, July 2013)

This academic speaks as an expert who has built up knowledge of her field and displays this confident sense of knowing the resources. Her response suggests that she knows how to determine whether a resource is authoritative and which electronic resource to consult. She is very familiar with the electronic resources and accessing them and speaks of Google Scholar which provides direct access to the freely available full-text of academic literature as well as those that are set up by subscription by your institution. Primo is a discovery tool for UKZN library that searches across a number of electronic resources, databases and journal subscriptions. Swetswise is one of UKZN library's journal subscription vendors that provide full-text access to journals. And Scopus is an abstract and citation database by the publisher Elsevier which provides peer reviewed literature.

The data suggests that many academics are not knowledgeable about the availability and accessibility of library electronic resources and services and this could assist with their tasks of learning, teaching and research.   Further, they are getting by just with the resources they are familiar with.

The next section discusses the mediated access to resources, the role that the libraries are playing setting and making available electronic resources.

6.2.3.4 Virtual use of the Library: provision of mediated access to electronic resources

 Many academics appear not to know that libraries can provide them with remote access to electronic resources. This supporting role of libraries is hidden behind the scenes (Haglund & Olsson, 2008). But when academics experience difficulties in accessing the electronic resources, the survey seems to suggest that they know they should contact the library or librarian for assistance.

Dr Lakshman explained the mediation role by the academics understanding of the traditional library, whereby traditionally the library provided access to these resources, that it was logical that the 'root' of the online access still had to be the library:

> *I think at the back of their minds they know that all this electronic access has to come from somewhere. Starting point is the library. Because of our own experience, at one time this was available at the library, the root, that's why they go there (AS5, Line 156-159, July 2013).*

But one academic challenged this notion that the academics needed to know where the access was set or that the library needed to be acknowledged for providing the mediated access and that it was their fault entirely for not marketing and publicising the resources available. But due to this gap in their knowledge of the available resources and what kind of access, content and scope is available is what is limiting their usage. This academic was upfront about the gap in her knowledge regarding library resources, but felt that the library should shoulder some of the responsibility for not having an adequate marketing and publicising strategy in place for its resources and services. This knowledge and awareness will be discussed further in 6.3.

> *There is nothing there [in the Library] that tells you what the library is doing for us. So I would like to see a series of*

> *posters, almost like a did-you-know on how the databases*
>
> *are set up, (and) maintained. (AS4, Line 258-261, July 2013)*

This academic alludes to the lack of marketing and promotion of library resources and services that is making the library become non-existent in their world. Academic libraries are losing opportunities to offer library training, advice and guidance to academics to find, access and use electronic resources. This response suggests that academics are not even aware that this service exist for them:

> *So even though the library is moving more and more into*
> *anonymity, and almost like non-existence, the library has to*
> *respond in some way to make people aware. Because this is*
> *not going to happen on its own. (AS4, Line 262-268, July*
> *2013)*

The academic is suggesting that the library is not responsive to the changing role of the library and not responding by providing the appropriate guidance on available resources. When asked in the interview (question 4.1) why it was that academics are not seeing the link between the library and facilitated access to the resources, but when they encounter problems in access, they turn to the library, Dr Tash responded: "d*o they need to see that link between access and the library? They could very well with ignorance continue doing that".*

The academics seem to understand that it is the core duty of libraries to arrange and make available information, but it is not something that they actively think about. Neither is it something that will get academics to contact their libraries about to question why this delivery of information, training, or guidance is not provided. As stated previously in section 6.2.1.1. the library is visited less frequently by academics and they work independently. With regard to training on library resources and services, the general feeling amongst academics is that they are adequately trained and do not require instruction, yet will

arrange it for their students and will only contact the librarians when difficulties are experienced.

The next section will discuss the hybrid library, which is an integration of the traditional library and the virtual library. Academics are using both the print and virtual spaces and resources and will be doing so for some time to come. Libraries in South Africa and the university library will operate as hybrid libraries.

6.2.3.5 Integration of the print and virtual library: the hybrid library

Academics seemed to favour an environment that enables the use of print and electronic information. The term 'hybrid library' refers to a library that has a combination of the electronic information and resources and traditional library and they work alongside each other, with neither of them being only print or only electronic. This term was coined in the early 1990's by the HEFCE *eLib Phase 3 Programme*.[18] The traditional library is defined as a specific place usually physical or fixed with a collection of tangible information and is usually located in a specific geographical space, with computerised library functions like circulation, cataloguing, serials control. An important feature is the online public access catalogue (OPAC). A digital library is where all the resources are available in digital form (for example CD-ROMs, and online databases) and the traditional library functions of acquiring material, arranging its storage, preservation and retrieval and making it available is usually carried out through the use of digital technologies (Oppenheim & Smithson, 1999). Telecommunications is an important element for the digital library because the information has the capability to be remotely accessed from a number of locations.

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[18] The eLib Phase 3 programme was as a result of the investigation in 1993 on how to deal with the crisis in libraries with the regard to resources, the increase in the number of students and the worldwide explosion in knowledge and information, conducted by the Joint Funding Council's Libraries Review Group. This was chaired by Sir Brian Follet and came to be known as the Follett Report. There were a series of programmes, funding and projects as a result of this investigation. The digital library initiatives was formed managed by the Joint Information Systems Council.

And Rusbridge (2008, p. 109) stated that "there will be a shift to more and more electronic resources, but the hybrid library will be in existence for long time to come.   As the hybrid library is distributed, this is sure to have an effect on the physical library building, between the physical place and the electronic network or between the print materials that is tangible and the electronic". Oppenheim and Smithson (1999, p 110) stated that the hybrid library "is about the way in which electronic resources is presented to users, and how these developments fit within the existing physical infrastructure of the library". Pinfield, *et al.*, (1998, p. 1) support this by stating that the hybrid library is used alongside other forms of library, and that the aim is to "is to encourage the end-user to discover resources and information that is available in variety of formats and is accessible, locally or remotely, in an effortless integrated way". The hybrid library is not a transition from the traditional/conventional library to the digital library. There is instead, an integration of the resources.

Dr Lakshman maintained that for his students, the print and electronic resources would have to exist side-by-side and both resources would be used by his students and himself:

> *Yes, I think physically staff and students are using the library,*
> *Textbooks are available there and it is very difficult to read*
> *that on the computer screen. But at the same time, a lot of*
> *the library material is available at the website and I would*
> *use that from the site instead of going in physically. Likewise*
> *journal articles are convenient to use from the computer*
> *(AS5, Line 71-74, July 2013).*

Academics are faced with the dilemma of using print and electronic resources simultaneously. But there is a perception that the human supervision in a digital library will not be required nor is it necessary. However, ICT and information resources are not the only resources that a library is made up of. Assistance will still be required in its application, use, training and support for these digital systems. Question 10 asked the academics to do a comparison of their print and online resource usage. Respondents had to indicate

approximately what percentage of the sources they use is print or online. Responses indicated that, currently, 58.8 per cent use electronic sources compared to 41.2 per cent that use print sources. This indicates that there has been an increase in the use of e-resources, but that print resources are still being used. Overall, the responses indicted that 58.8 per cent of their research needs were met with electronic resources and 41.2 per cent with print sources, but that there is a preference for electronic resources over print.

The results of the survey were both qualitative and quantitative. Respondents were asked which is more effective print or online and why in the questionnaire (Question 26). This question was open-ended and free responses were required by respondents on the effectiveness of print or online resource usage. The intention of this question was to try and check their understanding of the library space. Of the 45 respondents, 73 per cent provided answers to one or both of these questions.

Respondents indicated that there were various reasons for their choice of print materials: convenience, portability, and comfort in using them. The discomfort of reading documents on the computer screen was an inconvenience and most preferred to print because this was usable and readable:

> *It is very easy to use and browse. (Respondent 37)*

> *Print materials is easier to read and is reliable and it does not require the computer or the Internet. This can be read anywhere and is mobile and can used anywhere. (Respondent 39)*

> *I like print due to the fact that I like to scribble notes as I read. (Respondent 42)*

> *I prefer print media because one can take time to read and work through documents. (Respondent 4)*

Searching for information on the computer is not helpful as going through the pages of books. (Respondent 24)

Print allows for sustained work and reference (Respondent 42)

Journals seem a significant resource for academics, whether they are in print or online. The study done by Rupp-Serrano and Robbins (2013) of Education academics at twenty large public research universities in the US revealed that of importance to the academics is journal literature and this is one of the primary publications in their subject field.

The next section will discuss how academics become aware and know what available information resources there are.

6.3   Knowledge and Awareness of Library Resources

In this age of the WWW and the Internet, information can be accessed anywhere and the requirement to visit the physical library has disappeared. The study by (Kuruppu & Gruber, 2006) of academics in the field of agriculture and biology at the Iowa State University found that their academics were unaware of the electronic resources available and this was evident in the way they searched for information. The definition of information needs is the experience, understanding and perception of information.

Cunliffe (2005, p. 547) defines knowledge in terms of knowing. Knowledge, he states constitutes two types: 'procedural knowledge' or 'knowing how' and declarative knowledge or 'knowing that.'

6.3.1 How do academics become aware and knowledgeable of resources

The interviews and survey revealed that academics used various methods to get to know about the library, its services, resources and spaces. These methods were: By trial and error (self-taught) and External agents and library training.

A recurring theme was that academics had limited awareness or knowledge of library resources, services and facilities. As the library subscribes to many indexes and databases, both online and in print, academics displayed an unawareness of the applicable resources for their field. The study done by Washington-Hoagland and Clougherty (2002) at their institution found that academics were independent users of the library and were simply unaware of what resources, services and facilities were available.

6.3.1.1 By Trial and Error (or Self-taught)

The search techniques of the academics interviewed were by 'trial and error.' They indicated that they have not thought out their keywords and strategy with regard to information searching, but would do this randomly, trialling various keywords and electronic resources until a result that is satisfactory is achieved. Responses revealed that subject searches are not done and academics have difficulties in identifying correct search terms and performing in-depth searches and most are unsuccessful. Despite this difficulty, the help files, manuals, guides and instructions are never used to assist. Seeking assistance from the library or librarian is not a consideration. This unawareness displays little or no knowledge of the search techniques for many of the resources. The data also revealed that most users do not use the library Web page as a point of access when they start their research, but prefer starting with the sites that are their favourites and bookmarked and are used time and time again.

In response to the interview question on whether they were schooled in web technology or search methods, Dr Sonali indicated that her knowledge came from trying a few times and sometimes unsuccessfully to locate the information. Due to this method, she has spent many hours searching, and often gets frustrated without finding what she requires. She acknowledged that she needed to improve her information-seeking skills by getting assistance:

> *I am self-taught and have learnt through trial and error. I would keep looking until I found something, but it is not very often that you find something that you desperately need that you cannot do without. I am inefficiently looking for information, because I have not had the resolve to go and spend two hours to learn this thing properly. I am sure it would have saved me hundreds of hours. (AS3, Line 51-55, July 2013)*

But despite her perception of experiencing this difficulty of not being able to search effectively and efficiently, this academic is a prolific researcher in the School of Education and her achievements have been listed in the *2012 Research Office Annual report*. This suggests that her perseverance and commitment to conducting research has assisted her in reaching this status of prolific researcher (*Research Office,* 2012).

Dr Lakshman on the other hand, suggested that he discussed his information needs and searching skills with fellow colleagues and became aware of resources through his contacts rather than by making use of expert assistance from the library:

> *My experience has been through trial and error and by word of mouth, lots of by word of mouth. (AS5, Line 152, July 2013)*

Seeking assistance from the librarian is not a consideration yet a marked lack of awareness of search techniques is evident. Dr Radha also indicated that her training was by *"Trial and error, I learnt on the job, and had no formal training as such".* The data seems to suggest that young and new researchers like Prof Sonali, Drs Radha and Lakshman have learnt how to use the library and its resources through trial and error. This seems to suggest that there are no mechanisms in place for new academics to learn how to search for research information, formal or informal courses by the library or university.   It is a testament to their work ethic and tenacity that these emerging researchers discover their information sources through trial and error.

Lancaster and Sandore (1997, p. 247) have suggested that: "in the print library (physical library), the librarian knew more about where to find material and how to exploit it. But information technology has made librarians and users more equal in gaining access to, retrieving and storing information and this fundamentally changes the relationship between them".

The trial and error methodology may have been adequate because of the user-friendly online systems and self-service information technology. But the danger of this approach is that the academic may be 'missing' some vital information in their research.

The data is also suggesting that more seasoned and experienced academics who were senior in years and settled with their research methodologies like Prof Keshav and Mbali and Dr Tash are self-taught in learning about the library and its resources. The emergent technology users portray themselves as if they have a mastery but have little technological skill. They display a reasonable capacity to use of the technology, but when it comes to sophisticated searches they are lost.

Prof Keshav stated that he is self-taught and comfortable with his research skills. He started by looking at the references and bibliographies, footnotes or what is called 'chaining':[19] … *self taught to a large extent, getting the references and then moving from there".* Dr Tash explained her experiences as being self-taught and about experimenting and finding the information in that way: "*It is about convenience, putting stuff in, actually you have to do a lot of experimenting".* Prof Mbali explained that he has an efficient strategy and adequate skills to access materials that he is most familiar with and that is easily available*: "I learnt much of on my own, and you have to learn a more efficient way of searching".*

This academic was not only self-taught but revealed that he shared this experience with colleagues in his academic discipline. His response implied that he failed to ask for help, but had self-confidence in his information seeking skills to be able to run a workshop for his cluster.

> *I have also learnt from colleagues, and I run workshops for the cluster. This is projected on screen and I have shown them the possibilities. (AS7, Line 92-95, July 2013)*

This section revealed that academics are largely self-taught and discover the resources by trial and error. It is their sheer commitment and perseverance that results in successful search and adequate references to do their research. But the danger is that there may be information that is available, that they are totally unaware of. This state of affairs is 'alarming' given that the library spends a significant portion (70 per cent) of its material budget on access to resources like e-journals, e-books and full-text databases.

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[19] Chaining is when users obtain "articles of interest through vertical chaining (going from table of contents, to abstract, to full-text) or following the article by either going forward where they find the citation in which the source material is cited or going backward by tracking the list of references in the source article (Nutefall & Ryder, 2010, p. 229)".

6.3.1.2 By library training to use resources

Academics also revealed that they came to know about resources through training sessions and workshops offered by the library and hired assistants. These are people that have been hired to teach or do the sessions.   The sessions with the library were for their undergraduate and postgraduate students.   Some of their training was done when the university moved to new learning software and technologies and academics had to attend these sessions, for example, the Moodle sessions - where they were trained by the ICT Division of the university.   Some sessions were offered in-house by the university and Dr Lakshman:

> *I attended a workshop on postgraduate supervision, the presenter showed us a way of accessing the most popular literature on …. A method of doing it with key terms and the way in which the results are displayed. Those books most consulted comes us on top, and is a good indication of that person being the leader on the field. (AS6, Line 140-146, July 2013)*

Dr Radha also revealed that her training came from a Supervision workshop she attended: *Supervision workshop, by Mouton – how we can use the Web of Science, which he favours* (AS6, Line 66-67, July 2013). With the research requirement, academics are encouraged to attend compulsory induction sessions offered by the university to familiarise themselves with resources available at the university to support their research endeavours. The School management also has a responsibility to induct, mentor and train their academics.

Then there were episodic moments of learning for those academics that sat in on different library sessions that they had arranged for their students. Dr Radha stated that she sat in

during a training session done by library staff for her Masters students and learnt in that way:

> *Library staff have assisted in running 2 hour workshops. The*
> *librarian has been helpful to my Masters cohort. And so I sat*
> *in one or two of them and I picked up a few pointers. (AS6,*
> *Line 62-65, July 2013)*

These academics interviewed had indicated that they had a formal training session with the Library staff. Tahir, Mahmood & Shafique (2008) in their study on faculty members at University of Lahore, Pakistan found that users in academic institutions, by virtue of their positions accept that they should have existing information-seeking skills and therefore do not request formal training, and therefore feel uncomfortable seeking help. Their study revealed, however, that academics did not ask for assistance because they simply did not know that this was available. But help is available at the Edgewood Library in the form of one-on-one sessions and groups sessions of academics. The sessions are offered by the subject librarians on how to use information resources.

A reasonable conclusion arrived at is that because academics do not know, therefore they do not use and cannot comment on the usefulness or importance of resources. Academics have indicated that they are content with their skills and training and can work independently.

In the next section, the awareness and non-awareness of particular library services and resources are discussed.

6.3.1.3   Awareness or Non-awareness of Library services or resources

The library offers many services and resources to its users, academics, researchers and students. Question 27 asked the respondents if they were aware of the library services and resources. Table 6.6 presents their responses. Academic Reserves is a service provided for undergraduate students whereby publications like prescribed and recommended books for programmes on offer that are in high demand are placed on short-term loan. Academics that have a teaching load should place these items on Reserve.

From document analysis, UKZN Libraries has an institutional repository, ResearchSpace has the responsibility to archive, preserve and provide access to the original research or institutional assets such as research publications, theses and dissertations.   This responsibility has been given to the library to manage the repository on behalf of the institution and by making visible the institutions research output and increasing the research profile.   Repositories typically hold only a fraction of researcher's publications past and present. The other services on offer are ILL, photocopying facilities, the expertise of subject librarians and training offered to academics for their students.

Table 6.6: Awareness of library services and resources

Services and Resources	Yes	Uncertain	No
Academic Reserves (Short-loan) - prescribed and recommended publications	64.4	6.7	28.9
Interlibrary Loans	80.0	2.2	17.8
Subject Librarians	82.2	4.4	13.3
Photocopying / Printing	11.1	4.4	84.4
Ordering books and journals	80.0	4.4	15.6
Institutional Repository	17.8	35.6	46.7
Training students and staff to use the library and resources	55.6	11.1	33.3

The three main services, that academics were aware of, were: Interlibrary loans (80.0 per cent), Subject librarians (82.2 per cent) and Ordering books and journals (80.0 per cent). The response for awareness of academic reserves was 64.4 per cent, and the Annual statistics (*UKZN, Library,* 2012c) of the library indicate that there is a drop in the material placed on reserve at Edgewood and a decreased circulation of these items. The decline in reserve items and usage can be attributed to the full-text availability of these items or that academics are mounting the full-text materials in the course management software, Moodle, thereby eliminating the library use. Responses to the survey, question 27 indicated that academics are unaware of the repository, with a low response of 17.8 per cent. The benefits of depositing their material for themselves and the institution seem not to be appreciated. Academics work from their offices, with printing, scanning and copying facilities, it can be assumed that this service will not be used by academics in the library. The low percentage of 11.1 per cent suggests that academics are printing and copying outside of the library.

While some of the library services were not well recognised, most participants were aware of them or had used ILL to obtain their required materials. Academics displayed an unawareness of the electronic service that ILL offers whereby you can send an electronic request. If they are not aware of what the library and librarian can offer, they obviously cannot use such services and the data supports this.

The data also suggests that because academics do not know what the search and discovery tools are, they cannot comment on them and do not use them.   Despite this – mismatched awareness, random awareness or vague awareness of the services available, they are still getting by and are prolific researchers.

The academics formative experiences were of the physical library. As this academic recalled her undergraduate days at a distance education university whereby you gave your topic to the librarian and they did the search and a set of results were handed to you.

> *I remember when I registered through Unisa, and they give you a one off where the subject librarian does everything for you. I gave the topic to the librarian and she did the search. It was wonderful and then I changed my mind because I changed my topic. And then I felt I could not change my topic because I could not search for stuff. I think it is much easier to be in control, to be in charge and so on. Now I am much more in control, of course then I did study through Unisa. (AS4, Line 227-233, July 2013)*

Her experience is based on her undergraduate years and it seems that those experiences have shaped her information-seeking behaviour and this is how she got to know what she does know at present. Although academics are still using that knowledge, it is not being developed.   It is surprising that librarians are not the first choice to sort out issues.

Dr Radha states that the identity of the academic dictates how they work and has an influence on their work styles:

> *The more efficient I get, probably my visits to the library will decrease. The life of an academic is (a) very solitary one and it is largely (a) very independent one and if you are not prepared to learn on the job, and display that kind of independence, perhaps it is that which spurs them on to obtain information. When they reach a dead end – then contact the librarian. The life of an academic dictates their behaviour. I will do certain things as a last resort. And I do see how my work can be accelerated, and how much work can be more effective if I seek assistance from the library (AS7, Line 42-44, Line 78-86, July 2013).*

This academic revealed that she is responsible for her growth as an academic and needs to be independent and 'get on with the task on hand'. She is aware that there may be shortcomings in her method of doing research, but will only seek assistance as a last resort and is content with her information-seeking skills, even though she experiences difficulties. Furthermore, this search technique may hamper the academic in her research processes and everyday use of resources. This could be because of time pressures and workloads that academics have and this hampers the ability to seek assistance. They feel that their skills are adequate and they have a certain level of competency and any assistance from the library must add apparent value.

The next section will discuss how academics find items that are not available in the library or in virtual space, what happens then, when they have exhausted all possible avenues that they are aware of.

6.3.1.4 Availability and non-availability of resources in the Library (Question 32)

As academics displayed a lack of awareness and knowledge of library resources, how then would they respond when they find out that items are not available in the Library. How do they know what to do? Question 32 tried to ascertain what sources academics would use to obtain items not available in the library. As the academic library cannot provide access to all the scholarly literature in the discipline and varied research areas, academics have to obtain the items they need elsewhere (Engel, 2008). A list of options was provided for respondents to indicate what their sources of items were if they were not available in the library. The highest percentage of respondents (95.6 per cent) indicated Google as revealed in Table 6.7. The second highest percentage was for interlibrary loans, 90.9 per cent of the survey respondents indicated that they would employ this source to obtain material not available in their home library.

Table 6.7: Sources of items not available in the Library (Question 32)

Item	Yes	Uncertain	No
Google	95.6 %	4.4 %	0 %
Interlibrary loans	90.9 %	6.8 %	2.3 %
Contact the subject librarian or librarian	84.4 %	11.1 %	4.4 %
Access freely available full-text	75.0 %	25.0 %	0 %
Access full-text	68.2 %	29.5 %	2.3 %
Open Access	59.1 %	34.1 %	6.8 %
Contact a colleague	53.3 %	24.4 %	22.2 %
Contact the author or publisher or vendor	22.7 %	38.6 %	38.6 %
Purchase article	15.9 %	40.9 %	43.2 %
Other	13.2 %	36.8 %	50.0 %

Suber (2009, p. 4) defines: "Open-access (OA) as literature that is digital, online, free of charge, and free of most copyright and licensing restrictions. OA removes costs of traditional publications like subscriptions, licensing fees, pay-per-view fees and costs related to permission like copyright and licensing restrictions". The OA publishing movement has been around for more than fifteen years and has provided an alternative model to the mainstream for the dissemination of scholarship.

The Directory of Open Access Journals (DOAJ) lists 9,362 peer-reviewed journals (November 2016), but the amount of OA journal titles are limited in the SAPSE and ISI lists of accredited journals (Miller, 2008) and this could suggest that this may have an effect on submissions to these journals and therefore is not a source that academics will consult if unable to find information as academics target the highly ranked journals and peer-reviewed journals The limited number of open access journals in the listings may limit their knowledge and use of open access journals.

The least popular choices were to purchase an article (15.9 per cent) or to contact the author or publisher (22.7 per cent) The survey also indicates that items that are easily available like the full-text and freely available full-text are also a popular choice. But in the interview, one academic commented:

> *It is not very often that you find something that you desperately need that you can't do without. If you (are) writing an article, you can usually get another version, another similar article, somebody that cited it. So, it's not such a train smash, when you looking for electronic journals.*
> *(AS3, Line 116-121, July 2013)*

The response seems to suggest that when an academic experiences a difficulty when they are searching for an article, then they would discard the search and occupy themselves with

another search. CURL & RIN (2007, p. 31) in his survey of researchers and librarians of academic institutions in the US termed this strategy as the 'good enough' approach whereby if a source is difficult to obtain then some academics will abandon the chase and go without, instead of applying a rigorous approach to finding information.

This section discovered that academics became aware of library and information resources by various means, namely by trial and error whereby they taught themselves the skill of searching and retrieving relevant information. Another approach used was to attend library training sessions or sessions held by external helpers and these were formal sessions structured to teach their students how to access resources or as a part for formal induction or training done by the university. The data also suggested that academics are not aware of the abundance of information that is available and continue in oblivion due to this unawareness. The survey also tried to establish what academics do in the event where the information or resource they require is not available through the library.

What would their strategy be? Most academics revealed that they would simply be satisfied with their current resources. If they could not find a source, they would abandon the search and use other resources.

The next section discusses the different identities that the academic takes on when using the library.

6.4   Academic Library User Identity of the Diversified user

From the survey questionnaire and interview, it was revealed that lecturers are making diversified use of the library. They are using it as Researchers themselves, as Teachers or Trainers, through their students, referring their students both undergraduate and postgraduate to use the libraries, setting assignments and projects that require them to use

the library. During their supervision sessions, they are demonstrating to their students the information-seeking skills using library resources and setting up training sessions with the librarian to do this. And finally their use is also that of an administrator.

The next section will discuss the academic as the Library user as a Researcher.

6.4.1 Library user as a Researcher

Universities have made it imperative for academics to publish in order to be promoted and receive rewards in the institution and there is great emphasis placed on their research productivity. As academics productivity in terms of research and supervision is measured by the number of publications produced, that is journal articles, books, conferences, then academics information-seeking behaviour is important (Gad-el-Hak, 2013). The Research Policy ensures that awards, in the form of funding are made to researchers to reward productivity. "Differential rewards are provided, for instance, for journal articles, conference presentations, books, patents and successfully graduating research students. The researcher shall be free to use the research award for *bona fide* research purposes at his/her discretion" (*UKZN, Research Office,* 2008b, p. 9).

This academic, Dr Lakshman illustrated the pressure that is placed on academics to publish, so that when they have a huge teaching workload, they have to use the content of the course as material for research:

> *In Education Studies for example, where there are huge*
> *numbers like 800 per course, it is difficult to find time to*
> *engage in research. As a result we seize every opportunity to*
> *write papers on the work we are doing currently, especially*
> *on the courses we are teaching. The Understanding Research*
> *module, we used the students' perception of that model, their*

evaluation and complaints about the mode of delivery and translated into paper. This year we will do a follow up paper. We are trying to use the teaching to become research productive. (AS5, Line 45-52, July 2013)

As a result of this workload, there are certain 'star' performers that are prolific researchers in the School that are carrying the bulk of the research productivity:

The School of Education is most productive school in the College. And in the university, we are the 3rd most productive. It is a good thing but it means few people are carrying education. Some are research productive, and their accolades are going to the School (AS5, Line 45-61, July 2013).

To produce this kind of research, academics have been using the library as researchers. Working with information resources is vital to research. The study by (Committee, 2009; Tenopir & King, 2002) reviewed 200 publications published between 1995 and 2003 and found that there were various ways in which academics identified and located the publications they read. The most favoured method is by browsing recently published issues of journals from their personal collections, library or other source. This browsing enables them to be current and up-to-date in their field and is also done for conducting background research. Relevant articles are also found by online searching and thereafter these articles must be located, obtained and read. Most of these were available in the library collection because of their broad and comprehensive coverage in electronic format.

These methods are an indication of how academics conduct research, what kinds of research they do and what their information needs are. Prof Keshav had this to say about his task as a Researcher; *"That is exactly what academics are about, the thinking, reflecting, representing their thoughts by writing"* (AS2, Line 27-28, July 2013).

The findings here give the impression of poor quality research, opportunism and very rushed graduate output because of the workloads and pressure from the University.   But this is not the case – there is quality research being produced at the university and there are star researchers. But they have to juggle workloads and pressure and that is a reality.

This section described the academic as a researcher and library user. The next section discusses the academic as a Teacher or Trainer and Library user.

6.4.2   Library user as Teacher and Trainer

Academics revealed in the interviews that they provide library instruction or training to their undergraduate students and postgraduate students during supervision. Library training or instruction can be defined as showing users how to access relevant information resources for their course assignments. The interview revealed that academics are taking on the role of teacher/trainer showing their students how to access library resources. The comments below indicate that academics are conducting the reference interview with their students and providing the necessary training suggesting that their search skills are poor, and that they may not understand the result sets:

> *Much of my time is devoted to illustrating how to get scholarly articles. The problem with students is not the search for scholarly articles that is the problem but identifying appropriate keywords for the search. It seems that they are not identifying suitable conversations. The student takes study title and they look for titles directly with the titles. So if your study is about students doing teaching practice. But they are not searching for teaching practice, in a broader way or the philosophy of teaching practice, or the phenomenon of teaching practice. The ability to find suitable descriptors for*

the search is what prevents (hampers) them (AS4, Line 54-67,

July 2013).

Academics when they discover that their students are lacking in information-seeking skills, they step in and teach those skills to the student based on their experience and knowledge and awareness of library resources. The reference interview is an important part of information seeking, whereby the student has to identify the relevant keywords and have the ability to sift through the many references and select the most relevant results. With the quantity of information, some of it that is freely available, the student has to be able to discern what is relevant and what is not. This academic attempted to teach this skill to her student.

With the globalisation and corporatisation of the university, the student body is made up of local and international students. Dr Tash related her experience of an international PhD student in Mauritius who was having difficulty finding information resources and was overwhelmed by the information found and wanted to abandon his studies. The student did not understand that result sets are not organised by relevance. But instead she used her skills and found the information resources for him and explained her search strategy:

> *a student wanted to withdraw as a PhD student because he*
>
> *could not find anything. I sat with him for 2 hours – and we*
>
> *found 7000 articles. Of which I printed about 20 for him. And*
>
> *he changed his mind. I sat and showed him, exactly how he*
>
> *had to find words around it, find the author. (AS4, Line 54-77,*
>
> *July 2013)*

One academic expressed the need to be in touch with their student's research areas and have the ability to direct his students when information is needed. Students have knowledge about their topics and the research around it. This academic explained that he shows them how to do the initial searches and sets them up and then lets them take it from there:

> *Students do not have basic search skills. I open up my computer and show them the wealth of the resources. Look at their topic, Show them keywords, Expand the theory and literature. How accessible it (is), how they can download full-text from Google scholar. Setting them up for using the library (AS7, Line 35-45, July 2013).*

The response seems to suggest that academics are not aware if there is library training available for local or international students and they provide that training themselves. The academic becomes the trainer and mediator.

Prof Dristi also mediates between the information resources and her students and her communication with them is interactive and fully accessible and she believes that this is approach to use when supervising students and guiding them in their research:

> *It works through e-mails, now it is working through WhatsApp, BBM. I have all my students on BBM and Whats App. I'm part of that Moodle or who knows what's coming on tomorrow. When it will make communication too easy. I think that there will be situations, maybe instances when I will talk to my students on the phone. (AS1, Line 340-347, July 2013)*

There is a wide range of technologies available to researchers to communicate with their students and others, like Blogs, wikis, synchronous messaging on mobile technologies (Blackberry Messenger, WhatsApp, Mxit). Researchers currently have a range of social networks at their fingertips via the cellular telephone, tablet and laptop that apart from the library resources like the academic book or journal. The advantage of these social networks like the wikis and blogs are that it can be developed and updated instantaneously and comments can be 'posted' on their progress in research. Blogs and wikis are basically 2.0g

technologies or Web-based publications. Blogs are hypertext markup language (HTML) for the common people. Wikis are basically open web-pages, so if an individual has a registration then they can publish a page, make amendments and change it. But blogs do not have the same reliability as traditional resources. Instant messaging (IM) or synchronous messaging allows live text communication between people like BBM, MXit and WhatsApp. (Abram, 2005, Rowlands, 2008)

Because this method of communication was so successful, Prof. Dristi has a cohort session with her group of students:

> *I have regular meetings with my students as a cohort, not as a general cohort. It is disciplinary specific support that has enabled my students to get through their degree within the minimum period.*

The School of Education is based on a 'seminar-based cohort model'. This 'general cohort' as this academic calls it, began in the 1990's at the then University of Durban-Westville as:

> *"a programme of a collective of supervisors who recognise both their individual strengths and their limitations collaborated, complementing and supplementing each other's knowledge base, and providing a space for a collective of students to come together to think, learn and take risks in crossing disciplinary and methodological borders" (Samuel & Vithal, 2011, 9.77).*

According to Samuel and Vithal (2011, p. 80) "this cohort model consists of three phases, each directed towards students developmental trajectory from refining the research design, to engaging with and producing data within the field, and finally to the writing of the thesis report". Samuel and Vithal (2011, p. 80) further state that: ' these three phases are not mutually exclusive and that each stage of headwork (epistemology), fieldwork

(methodology), and textwork (representation) all co-influence each other as the study mutates and develops. This academic thinks otherwise and concurs with Dunpath & Govender (2012, p. 3) that the support system she has in place provides her students with: "purposeful nurturance, collaboration and administrative guidance" and that her postgraduates students are able to finish the degree in the minimum period.

> *For me, it is about time to do degree. All the students I have to supervise, without reason, they will finish in 2 years. I do not have to wear a feather in my cap. And that space is very important – for (a) significant number of students (AS1, Line 257-261, July 2013).*

So the new ways of communicating with the available technologies are enabling academics to successfully supervise and teach their students. Academics have become the teachers of not just the discipline, but the technologies, resources and services available to their students. The technology is enabling academics to offer their supervision at the point of contact with their students and is not limited to the library space. The academic offers a whole service to their student and the student may never have to engage with the other support services that the university has in place, like the library.

The next section discusses the academics' engagement with the student and the library use. This engagement is as a co-researcher and learner,

6.4.3. Engaging Students as Co-researchers

Academics receive 'substantial' research rewards for their research and they use the students to do their research instead of coming physically to the library. Academics engage their students as co-researchers or research assistants who can conduct literature searches and sift, manage and organise the search results. Due to the time-pressured academic

environment, academics have to find a happy medium in balancing their research with other duties such as teaching, administration and other academic duties and therefore the most efficient way to work is thus an important issue, as explained by this academic:

> *I have not done it myself, but we use research assistants or students to help with the research. I rather use my support services that are available to me. . They would ask the librarian to source the book, use ILL and search the country, search the library, search the web for current (material).*
> *(AS2, Line 142-155, July 2013)*

This academic described himself as 'lazy,' suggesting that he may not apply any effort in obtaining the publications if it is not available electronically. This may be as a result of the speed in which you can obtain an electronic resource and it only requires the 'click of the mouse.' Previously if the academic required the printed resource, they would have to go to the library, photocopy their material, or request the item from interlibrary loan. Or that with the necessary research funds available to him, he can use the services of assistants rather than do 'donkey' work himself. This also suggests that the postgraduate student becomes the co-researchers or research assistant who undertakes the groundwork for the academics. Many professors are star-struck with their own achievements:

> *I'm rather (a) lazy, individual- but the work is getting done.*

There is no embarrassment or awkwardness that they do not require or use the physical facilities and services of the library. It is a bold and brazen statement. Two of the most successful researchers in the School of Education do not use the physical space and use their students as co-researchers. The student as co-researcher and research assistant also allows the academics to a range of readings within their fields, without having to using the physical library personally:

> *My access to information, is also via the student. And so when they access, you know, information I also get to know about it. That expands my opportunities of being exposed to*

> *other readings. So the library doesn't now form a central role*
>
> *in terms of my accessing research materials. (AS2, Line 44-*
>
> *48, July 2013)*

For both senior academics, the appeal of a research assistant to provide a reliable and personalised service is crucial, because it saves their time. The research assistant can search for and retrieve the relevant information from multiple sources which will not only save the academics time but may potentially have an effect on the quality and impact of their projects and will ensure that they are completed within timeframes. This allows them to meet the research target set by the university of the prescribed number of productivity units per year. According to the framework for workloads, although 45 per cent of their time should be devoted to research, these assistants or co-researchers may make it possible for them to meet and top the research targets set.

The study done by Robbin, Engel and Kulp (2011, p. 524) of the engineering academics at their institution, revealed that when academics where asked which sources were important in assisting them with their research, they responded:

> *"Of the nine resources listed namely face-to face discussion*
>
> *with students; attendance at conferences; e-mail discussion*
>
> *with students; Internet resources; e-mail discussion with*
>
> *colleagues, books; scholarly journals as assisting faculty with*
>
> *their research, the two that were found to be statistically*
>
> *significant were the face-to-face discussion with students and*
>
> *e-mail discussion with students".*

While the academic is recognizing that the physical space is useful for their research to get done and that does not necessarily mean they have to physically use, their co-researchers and research assistants do it for them. The academics seem to be arguing for library independence, with emerging office library zones and home library zones, yet they claim the need for it.

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Academics also receive substantial funding for project work and students are used as assistants or co-researchers. Usually this is time-consuming and as the research usually need to be extensive, the assistant can search widely and experiment with various sources. The assistant can also sort through the huge amounts of print and electronic information. This would require some judgement and familiarity with the subject on the part of the assistant. This academic, Prof Dristi who is a prolific researcher and reveals that the project work can get done by following this approach:

> *What I would do, I would provide them with an article – like a*
> *hand me down. Then I would [say to the students I supervise]*
> *Now Darsh – it is your turn, please provide all with articles of*
> *a particular topic. What is becomes is a collective amongst*
> *the students, knowledge amongst students There is a level of*
> *sharing, sharing of that knowledge Each of them have*
> *completely different research agendas, research topics. (AS1,*
> *Line 266 -269, 282-285, July 2013)*

Not only is the academic benefitting from access to these research resources but the students, who are Masters and Doctoral, as a collective are also exposed to a range of readings and each of them may not have to do the searches individually. This suggests that this academic is spreading the load amongst her students.

Academics are able to meet their research targets with the assistance of co-researchers for their supervision, project work and post-doctoral work. This next section discusses the academics engagement with the student as a learner and library user.

6.4.4 Engaging Students as Learners

Dr Lakshman revealed that books are the basic and general source and his students should access these themselves as this would allow his students to obtain an overall understanding of the theories or methodologies in his subject area. This academic expectations are that his students should have the necessary skills to search for information but when required he would devote time to enable them to obtain those skills. But he did not direct the student to get assistance from the library or librarians and assumed that the student would do this on their own as evidenced by the following statement:

> *As a supervisor there is an expectation that the student will access the books himself. It is the supervisor's task to point the student in a certain direction. Thereafter [it is] left to the student to access that information. In the Oxford tradition it is not my job to direct [students] to books. But it is not an attitude I want to adopt, not necessarily an expert I would say to the student, you are the expert. You find the material and introduce me to it. The student is finding the stuff. And I make sure they put it down correctly. The supervisor does the reading and says try this and try that. (AS5, Line 88-99, July 2013)*

Students usually consult with their supervisor as a starting point and beginning to their research journey. In a mixed methods study of postgraduate students in the UK, George, et al. (2006) reported that most of the postgraduate students surveyed followed the same approach of consulting with the supervisor first. Similarly, Catalano (2010) concurred with this finding and reported that 92 per cent of the students first consulted with their professors for research assistance. Further, Jamali & Nicholas (2006) found that consultation varied with postgraduates, especially with doctoral students who consulted with their professors whilst master's students were unlikely to do so.

The RIN report (Marshall & Rossman, 2011) found that while doctoral supervision practice was different amongst departments and institutions and the information-seeking skills of students were not always up-to-date. Additionally, the supervisor's task was to concentrate on academic writing, rather than on improving students' information-seeking skills. The Internet was cited as the beginning point for most information searches done by students including doctoral student after consultation (Kuruppu, 1999; Wisnecki, 2005; Zhang, 1998) including doctoral students.

Prof Mbali's response suggests that his students are unable to distinguish appropriate resources from inappropriate resources and felt strongly that he first has to orientate the student before he lets them use the library resources:

> *Students do not have basic search skills. I open up my computer and show them the wealth of the resources. Look at their topic and show them keywords and extend the theory and literature. How accessible it is and how they can download full-text, setting them up for using the library (AS7, Line 37-41, July 2013).*

The academic voiced feelings of reservation at having to access too much information and that students had difficulties in sorting out the most relevant references for their specific research topics in the electronic environment. The access to the electronic resources is very important to researchers. Having access to more databases than they are able to use, seems to be beneficial for students because they now have access to material that was previously unobtainable. But this also presents them with an instant problem, that they may be encumbered with too much information.

His response also suggests that students do not understand the results, and have to scrutinise a lot of material that may not be appropriate. Electronic access allows them access to a plethora of information .To begin to sort this out a valuable strategy is to know

the particular authors and researchers in the area of interest. In this way the student is able to extract useful information which would have been difficult to locate. Information such as working papers or conference papers.

Dr Sonali reveals that she enables their access initially and then they have to go to the library and help themselves. She fails to point out though that to login into the library system (as with any network in the university) you would require a student or staff ID and password to access the electronic resources:

> *So I can help them in my offices to just show them initially. Then they tell me more and if they are registered, I did not know, that you go there and you register as students. You go onto the library space, access the library themselves and they would come and borrow the books themselves. Even my B.Ed. Honours students, once they discovered that, then they were able to search. (AS3, Line 40 – 42, July 2013)*

Academics in assisting and providing guidance to their students on what library resources to use are initially setting them up with the access and basic searches and then expect them to continue with this on their own initiative. In this process of assisting, they too are learning about the resources available.

6.4.5 Engaging Undergraduate Students

Undergraduate students use the library for different reasons. They have research-driven assignments and have to conduct literature searches for completion of their assignments and tutorials and other work. As stated previously, teaching is a component of the academics' task and with the undergraduate research, their work is in the form of assignments and this requires the use of the library resources.   There is an

acknowledgement by most of the interview respondents that their undergraduates use the Library for different reasons.

Dr Lakshman outlined how he refers students to the library and is concerned that undergraduate students may only be searching the web and ignoring the library with its books, journals, databases and full-text resources and sees this space as essential to the university. This academic is suggesting that students are unable to separate appropriate from inappropriate resources for their assignments and may be enamoured with one kind of resource or another, so assistance is necessary:

> *[The academic] must be familiar with what is on the library shelf. It is useless asking the student to find something on the shelf if it is not there. There is a lot of thought and planning and where to look for what and [we] are working closely with library staff. But the approach for the postgraduate students differs because they are required to do more than a literature search. In the Honours programme we have a library task that we give to our students, they are taken into the library LAN (Local Area Network) for that. This kind of teaching space is required if we to do more of that. With the undergraduate student, you do help them as well (AS5, Line111-117, July 2013).*

Dr Lakshman pointed out that he has a high teaching load and is a co-ordinator for one of the compulsory Education courses; Education Studies and that course has 400 fourth year students and the third year class has 853 students. These are big groups of students to teach the resources to, she enlists the assistance of the library staff to conduct he training and believes that the undergraduate students have to be assisted. These sessions are conducted in the LAN's (School of Education, 2012).

The final section in this part discusses the support that the library provides to academics for research and teaching.

6.4.6   Library support for Research and Teaching

Libraries have to carefully consider the resources they acquire for their users because these should reflect the competing needs of the institutions learning, research and teaching (CURL & RIN, 2007). Question 31 in the survey tried to gauge whether academics felt that the provision of resources and services were focused on teaching, research or a balance between both. The results of the survey indicated that most academics felt that the library was placing the emphasis with regard to resources on the teaching. Figure 6.4 presents the responses on whether the library collection is balanced in favour of, teaching resources or research resources.

Figure 6.3: Provision of teaching and research resources
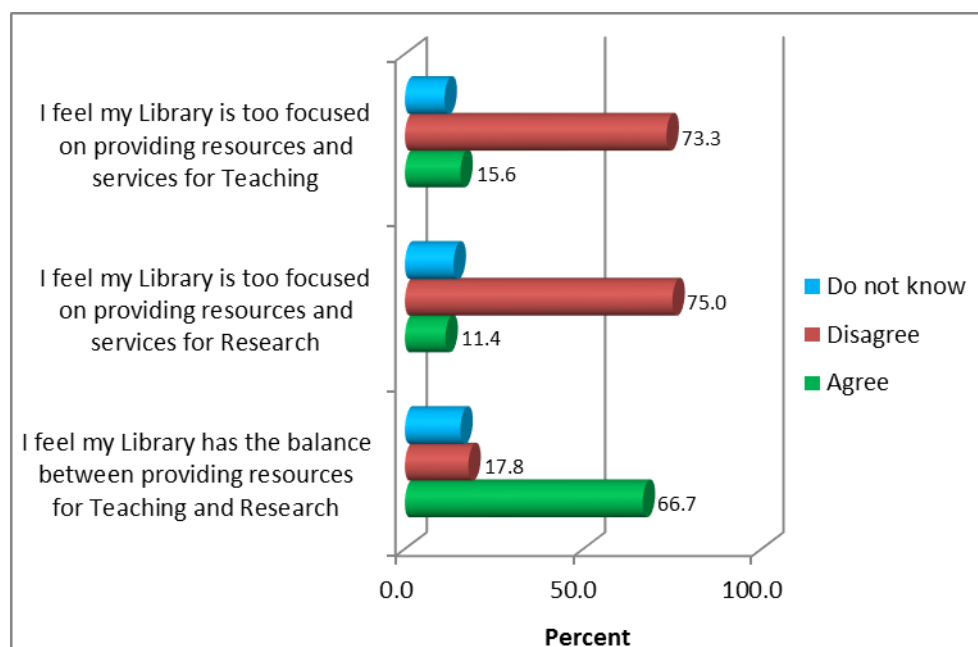
Two-thirds (66.7 per cent) of the respondents agreed that the library has the right balance in terms of resources for teaching and for research. Another reason for this response may

be that the majority of the respondents for the survey were lecturers, 57 per cent, followed by 15.5 per cent who were senior lecturers. With their workload they could have more teaching. This is verified by the levels of disagreement (73.3 per cent and 75 per cent) observed for the first 2 statements. Even though UKZN purports to be a research-driven university, the needs of teaching take priority in the academic libraries. Although the university strategy on research should be influential in shaping library policy, the survey results show that teaching needs does take priority.   These responses suggest significant levels of dissatisfaction and a perceived imbalance between serving the needs of teaching and research. This may be detrimental to the provision of resources for research.

Universities invest enormous amounts of money, time and energy in their students. Providing students with adequate resources and support, including in the library, is required for protecting and increasing the return on these investments. Harris (2011) states that "involving a librarian can help to reduce student attrition and improve degree completion rates. Because academics have to teach big classes they require assistance with training them on information resources and call on the library staff to assist, as this academic has indicated:

> *The numbers are just too large to help them effectively. (AS5, Line*
> *111 – 120, July 2013)*

In this way the academics are pushing the students to use the physical space of the Library. The librarian can provide resources and services to support syllabi, lectures, reserve readings and lecturers should form partnerships with the library staff to leverage existing data sources. Rempel (2010) and Conway (2011) affirmed this: "the first year of study is the best time to establish contact with students to help them become proficient in their information-seeking activities. Thus, according to this, individual libraries and academics should work in concert to develop these essential skills in their students as early as possible. Academics should work with library staff to grapple with the increasing complexities of information sources in their disciplines.

Prof Mbali concurs that librarians have the expertise to offer assistance to students:

> *Then I refer them to people like the Head librarian and*
> *Subject librarian. They work closely with William. (AS7,*
> *Line47-48, July 2013)*

This academic displayed that he has a relationship with the library and it is intimate especially as he is aware of the names of people that are being used. Moreover, academics may not have the expertise required to teach the advanced information research skills that most students need (Briggs, 2005, p. 267).

The next section discusses the view academics have of the future of the library in light of the information technology explosion, retreating to their offices to work and the changing nature of their students.

6.5 Future vision of the Library spaces

The final question in the survey, question 34 and final question in the interview asked academics about their future vision of the library. This question tried to ascertain if they saw the library changing or remaining moribund and if this would impact on their use and understanding of the space. According to Du Preez and Reddy (2014, p. 2) vision can be defined as a 'cognitive process that requires you to put aside the constraints of habit, automatism, banality, so that the possibilities of alternatives can be perceived.' This suggests that the academics understanding and usage of library space should not only be driven by their everyday personal experience but should include societal and professional visions.

6.5.1 Classical / Shifting notions of the Library

Freeman, (2005, p. 9) stated that: ''the academic library as a place holds a unique position on campus. No other building can so symbolically and physically represent the academic heart of an institution''. As stated by Demas (2005, p. 25) "in recent years we have reawakened to the fact that libraries are fundamentally about people – how they learn, how they use information, and how they participate in the life of a learning community. As a result, we are beginning to design libraries that seek to restore parts of the library's historic role as an institution of learning, culture, and intellectual community.' Beyond the threshold concept of the library as a physical place that enables information-seeking behaviour of students and faculty alike, there was also, in the language of respondents, a repeated reference to something more, something richer. In some instances, the difference was only a matter of degree; that is, descriptions of favourite libraries were little more than extensions of the threshold concept, much in the way one might describe a favourite restaurant or holiday spot.

According to Dr Tash, the library is described as a notion. It is the physicality that links up to the symbolic, a push from the physical to the symbolic. But, if you accept that then that may result in the demise of the library. This thinking is based on the 19th century concept of libraries, the traditional library. More up-to-date thinking acknowledges that: firstly, the Edgewood library buildings are not historical nor do they have a long tradition and implying that it cannot influence students' feelings of well-being, belonging, and identity as does the historical Oxford library in the UK and comments as follows:

> *The Oxford – which has this whole with centuries, filled with*
> *history, attracting of tradition. Here it is old-fashioned (AS4,*
> *Line 289 – 296, July 2013.)*

 The vast majority of university buildings at UKZN are simply functional standard units, constructed to the designs and standards of other comparable buildings of their place and

time; they have no grand message to send. The physicality that links up to the above gets transferred to the symbolic. The library space does not display any cultural expression of the users of the space. Kuh *et al.*, (2005, p. 93) state: "the building as symbols may have a significance in supporting learning, where 'the physical and the emotional become inextricably intertwined to form an almost palpable "sense of place". Eigenbrodt (2008, p. 4) states the "great academic libraries of this time have been buildings with stacks and grand reading rooms. Working in such a place was about silent contemplation. The reader had been alone with his book at his place together with many other readers, all busy with their own research". These buildings displayed a reverence for knowledge, the joy of learning and the importance of concentration, comfort and aesthetics.

She further illustrates this notion by saying, that there should be an element of preservation in our Libraries, which is lacking:

> *Do we have rare books in this library. I do not think we do. You know something, or do we have a 5000 year old manuscript. We do not have those kinds of things, about how long things survive and how important it is. We don't have this. (AS3, Line 310-313, July2013)*

She provides reasons for this state of the situation in the country and university:

> *Our country is also quite young. If you take Britain, you get manuscripts from the 12th century and you have to have a special appointment and you have to wear gloves, and special masks (so that the acids). Then they have their book repair division where people can come and see experts working and keeping the books in good order and repairing them. Yes, we don't have the artefacts. We do not have all of those things. We are so much into this disposable site, we just get rid of stuff. (AS4, Line 310 – 326, July 2013)*

This academic is also illustrating her exposure to the international libraries and trying to relate it to a South African context. She has a romanticised view of the library. The library has long been regarded as a centre of knowledge as well as the centre of its community. They serve as the repositories of the written historical record of the knowledge of cultures and civilizations, which needs to be preserved. She reiterates that South African libraries should house artefacts that can be read and studied. There is actually a kind of nostalgia associated with libraries today as she laments at the disposable culture of current users and implies that as a result the demise of the libraries may be increased. The most famous example is the historical Library of Alexandria, in Egypt, which is alluded to by one of the interview respondents. According to this individual if the library burnt down then as a result, it can easily be replaced (Latimer, 2011, p. 114).

> *What is there for me to say that this library must live forever. So it is like the library at Alexandria, why did they have to rebuild on, to replace it. Because there was this feeling that we have lost something great. If this library burnt down, tomorrow, I wonder if anyone would say that something great was lost. Even the architecture is not right. There is just one space, which is the Mosaic, that is really attractive. But other than that we have not really worked at it. (AS4, Line 336 – 341, July 2013)*

A literature search of both the architecture and the library literature returns references to a number of key libraries, which herald a new approach to designing information spaces in the twenty-first century. As Dr Tash indicated, the library at Alexandria, with all its deep historical and symbolic references, was designed by the Norwegian architect, Snøhetta (Latimer, 2011, p. 114). Built at the beginning of the twenty-first century, this library, with its many reading rooms flowing down seven terraces and its circular form echoing that of the harbour on which it sits, aimed to bring together the printed and the electronic worlds

of knowledge as well as to regenerate the seaport area of the city and act as a symbol of culture and national pride.

6.5.2 Contextual factors

But the South African context is very different from the libraries of the North and the European libraries that have been in existence for hundreds of years. The needs in South Africa are also very different, artefacts are housed in museums.

Academics revealed in the interview that they see the future of the library from a contextual, historical, sociological point of view, not an academic one. They are so context-bound, that they cannot think beyond that. A future form should be driven by different types of ideas, sociological factors, historical hangovers from the past and the, present situation of education which is in crisis.

Dr Lakshman reiterates that in the South African context there will always be a need for a library, because of the needs of our students.

> *Always a need for the library to go to, to access the sources. But it is a worrying factor if library becomes extinct hard to imagine a university without a library. Frightening thought if there is no library as we know it. It is future would also be in large part –dependent on the social circumstances of our students. (AS5, Line 192 – 195, July 2013)*

This thought about the fact that I may not require the physical space of the Library but that my students, especially undergraduates will require a library, is also revealed in Prof Dristi's comment:

> *For as long as this country, and for as long as we in KZN, and this university particularly, and have students (who are) in the main and not unlike Stellenbosch and UCT – the working class – poor students, this library space is still required, in terms of access to computer, access to internet, chair (work spaces), access to late hours. For as long as that inequality is there you will see the need for that. Because we have to take into account the social context in which our students emerge. There will come a time though when you won't require the number of computers, chairs, desks, there will come a time when you can function as a library from an office as large as mine.. (AS1, Line 381-396, July 2013)*

The context of the university and library in South Africa requires a physical library. This academic intimates that libraries are enduring features of the academic environment, central to the value and practice of scholarship. In point 6.5 I consciously allow for the library space to be seen as a notion or as a symbol but this is counter to the argument that Dr Sonali and two other respondents put forward. They speak about the library being at the heart of the university:

> *It will always be there, because the library should be there to share, you sharing resources, you are learning. We go there to enquire, we go there for help and they are helping us be more efficient. Because there is no way we can get everything electronically. (AS3, Line 134 – 138, July 2013)*

And many of those who do not use the physical library nevertheless see it as a symbol of the intellectual heart of the university, the intangible value of the library. Many academics cannot envision the university without a library.

Freeman (2005, p. 6) concurs with this academic that the library is an important space for its functional value and value in the university community by stating: "it is a place where people come together on levels and in ways that they might not in the residence hall, classroom, or off-campus location. Upon entering the library, the student becomes part of a larger community – a community that endows one with a greater sense of self and higher purpose".

6.5.3 From Dewey to Demise

There is an abundance of literature on the demise of the library. Over time, libraries have been symbols of learning just as churches are symbols of religion. Beyond all the practical uses of libraries as places, such as a place for staff to work, or a place for students to study or use computers, to meet and discuss a project or research questions, libraries serve as the depository of the written historical record of the knowledge of cultures and civilizations. They are not museums but rather house artefacts that can be read and studied. There is actually a kind of nostalgia associated with libraries today as the talk of their demise has increased.

The concept of academic library as place is not new, nor is the debate over academic libraries' relevance. A conference at Harvard in 1949 included papers questioning the future of the library in academic institutions and predicting the demise of the printed book. These issues still resonate 50 years later. Scott Carlson's controversial 2001 article, "The Deserted Library," in the A *Chronicle of Higher Education* hinted at the death of the academic library — and prompted a passionate response, indicating that the issue is still under intense

debate. The article hinted at the "end of libraries," but later stating that the orientation of libraries is going to be different".

Carlson (2001, p. 11) acknowledged that libraries were changing their orientation, doing what the users want and not what the librarians want. His major theme, however, was not the Starbuck lattes (coffee) and Krispy Kreme doughnuts at the coffee-shop at the main entrance to the Texas Christian University Library or the book swaps, art exhibitions, and poetry readings at Carleton College but giving the users what they want so that there is no decline in the use of academic libraries.

Other writers (Bennet, 2003; Latimer, 2010) who believe in the academic library's continuing relevance assert that the library building is still essential, but its role in the higher education environment is changing fundamentally to support more educational, collaborative, and social functions while integrating print-based and electronic knowledge. Weise (2008) also notes that the popular image of the library has evolved from a "storehouse" of information to an "active participant in the educational process".

The next section discusses the fusion between the physical and virtual library.

6.5.4 Fusion between the Physical and Virtual

The impression has been created that lecturers involved in undergraduate teaching are pushing for physical library space and also their own library pathways. Those that are engaged with postgraduate teaching are pushing for symbolic spaces, while libraries as physical space is the form needed by those lecturers who have undergraduate students. For graduates who are largely not on campus – there is a virtual need. They show the enduring nature of libraries. It is resilient, not just symbolic anymore.

6.5.5 Emergent Office Library Space

As discussed in section 5.4, academics have suggested that they are buying their own material. They have the research funds to be able to buy what they need and therefore access to a book collection or journals is not necessary for them. But that is the difference between the academic and student. Academic have started an office collection. The library in their mind is not necessary for journals. For them the library is physical, only the books that are there.

In the open-ended question (35) on how their use had changed over time, one academic commented that he had started his own collection of books.

> *I am moving towards expanding my own collections. Over time, I have visited the library less often. I have relied more and more on electronic resources, purchasing books, building my own personal collection of texts via the research funds I have accumulated through publications and post- graduate supervision.*

There seems to be complete ignorance on how information service works and how the access is provided. The concept of the library is almost always shrouded in physicality. It is physical, we can do without the space, but the electronic is an integral part of our research, even if we do not acknowledge that.

6.5.6. Emergent Home Library Space

One of the academics indicated that publications are an important resource for her research, then she will purchase her own material if it is an important work in her field. So she has set up electronic access and physical collections in her home:

> *As you can see I have a large range of books. This is only half*
>
> *of what I have. I have an equal number at home. When I'm*
>
> *using an author I want to purchase the book and I think that's*
>
> *the why we going. (AS4, Line 24-30, July 2013)*

But another reason stated for academics using the flexibility of creating home library zones is their personal commitments, Dr Sonali states that she prefers to work from home:

> *For myself it is easier for me to see them [students] at my*
>
> *house, because .. of children,…. (AS3, Line 51, July 2013).*

6.5.7   Future vision of the Library

To gauge how academics would envision the library space in future, a final question (35) was asked in the survey and the interviews on how they envisaged their use of the library changing over the next three years: Prof Keshav suggested that libraries would remain because of the collection of monographs and books that it houses:

> *Monographs would be kind of people's life, accumulation of*
>
> *knowledge. Yes you would access monographs of people*
>
> *who have shaken the world, in terms of Bourdieu, Foucault,*
>
> *you want to leave those in the building. (AS2, Line 65-88, July*
>
> *2013)*

But Prof Dristi on the other hand suggested that with technology, the print collection could be stored off-campus, even in a museum because the technology would transform the way the library operates. This is a trend in the academic libraries of the North - remote storage of their printed material, but this trend has not taken root in South Africa yet:

> *All that stuff may be archived to a museum I do not know*
>
> *what is going to happen but can clearly see with technology*
>
> *that will change. We are in the 21st century. There might*

come a time when that too will disappear, If we get the technology right in terms of getting access to books.

But Dr Tash reiterated that because we lack the traditions of the libraries of the North, that libraries at the university would simply be a storehouse of books:

But as I said in South Africa we do not have a rich, I might be mistaken, you know this old history, you know if I take Cambridge like that where the building itself is a piece of art. You know, it is such a historic building that people (are) drawn to it. There's some romanticism about it. We do not seem to have the romantic notion of the library. The library is just a space where books are kept, it is not a space where history, in itself. (AS4, Line 289 – 296, July 2013)

She continues by saying that a reverence for history and tradition could begin at schools:

…because history comes and goes, and it's about, I do not know if schools are doing enough about a respect and a reverence for history. Everyone is, remember in which age, we are living in a disposal age, last year's IPad is not good enough for this year. Yesterday's cellphone is not good enough for today. History and so on might not be valued as I think it is. This will only change when we change the mindset for a value for things that are old. And traditional, it is not going to happen. What is it that we people make aware that this has to be preserved. (AS4, Line 300 – 307)

My assumption is that this library space is not primarily a shell defined by architecture, but constituted as a social space by nature of its usage by the different user groups. The appearance of individuals in the public realm and their combined activity converts the shell into a societal space (Eigenbrodt).

Much has been written in the literature (Gayton, 2008; Sens, 2009; Sullivan, 2011, Library & Information Association of New Zealand, 2015) on the future of libraries and library spaces but these developments were not raised by the survey respondents or interview participants. The literature is abuzz on how the modern academic library will be collection-free with more material being stored off-site and that freed-up space will be used for multiple purposes like group and individual learning, social spaces, and collaborative spaces. There will be spaces for different activities and flexible spaces with movable furniture and eco-friendly and filled with light. It will be a dynamic community space with coffee-shops and IT centres.

6.6   Summary of the chapter

The propositions that frame this chapter involve the academics' use of the library, comprising the temporal and spatial uses which explore the library as a physical and virtual entity. It looks at their knowledge and awareness of library spaces and resources and what they envision the future of the library to be in light of the explosion of information technology and changes in the way students learn and the pressure of the university requirements.

In the current dynamic information environment, information-seeking behaviours of users change and evolve with emerging technologies and information dissemination systems. University libraries have for decades played a critically important role in supporting research and the academic endeavour in all subjects and disciplines within their host university. But the last decade has brought a massive change in the relationship between academics and libraries (Bryant *et al.*, 2009). Technological developments and the availability of information resources online have changed how research is done, and also the services and resources that university libraries provide to their research communities. In this age of the World Wide Web and networked information resources, university users do not have to

come to the physical library to access information. The communication between the library and the academic community, therefore, has become more difficult and challenging. It is becoming evident that university communities are not fully aware of the resources and services available through their libraries. There seems to be a gap between the awareness and effective information-seeking behaviours (Kuruppu & Gruber, 2006).

Traditionally the task of the library was to find a journal in print, so it is a logical follow-through that you will do this online. Academics seem to be oblivious to the service. They recognise the virtual space, but not by knowing about the services. They blur the physicality by their infrequent use of the physical space, not referring their students to the library for expert assistance in the information technology and not engaging with the library in terms of collection development and user education. This is the difference between the student, and the academic who is publishing, and generating research funds and who thereby has access to funds to purchase the books he or she may require for their research. . The concept of the library is shrouded in the physical. There is nothing beyond.

Academics are generally unaware of the library's subscribed resources. It is therefore a testament to their tenacity and work ethic and commitment that they are doing so well - because they are a conduit that facilitates research and that mediates that space. The library as a physical space is enduring. These faculty members are reducing their use of local library services for discovery purposes and therefore seem to put less value on the library's traditional intellectual role as a gateway to information. However, these faculty members continue to strongly support the library's collection and preservation roles.

The third critical question will be responded to in the final chapter. Chapter seven will present the following components: academics' use of the physical and virtual library, convergence of the academic and library identity, fusion of the physical and virtual library and the academics' vision for the library that will lead to an important theorising of the library spaces. The social sciences attempt to extend existing knowledge about a

phenomena using established theories to assess data. This allows the researcher to engage with a deeper description, interpretation and explanation of the phenomena.

Chapter Seven: Findings, Insights and Concluding remarks

7.1 Introduction

This is the final chapter of this thesis which responds to the third critical question: how can the understanding of library spaces be theorised. Ramson (2015, p. 6) states that: "theory emerges as useful in providing an established, consistent, organised set of ideas and concepts, whose application to observed phenomena provides explanatory, analytical and interpretative value, and whose purpose is to provide a conceptual tool to assist understanding our complex social reality, as well as to contribute to knowledge development, or extend existing knowledge". In this chapter I begin with the insights from the literature and briefly present the core themes coming from the literature review and challenges found from the research methodology. The research findings will be summarised and an abridged discussion of the findings will be presented. Finally, I will provide some insights gained from the study and present concluding remarks.

This chapter begins with the insights from the literature. Firstly, I found that the core points were how corporatisation and globalisation and their associated policies have shifted the ways universities are managed with the focus on generating funds through research which has implications for the university's ranking and prestige (Altbach, 1996; Bentley, Habib & Morrow, 2006; Kishun, 2007; Sanderson & Watters, 2006). Research universities require vast resources, and a large investment in laboratory facilities and equipment and libraries. Secondly, there is an increasing amount of literature on the pressure for academics to publish and to do research and the requirements of the university and the effects of globalisation on their research. The literature is pushing the idea that publishing is important for academics in the 'publish or perish' debate whereby their productivity affects the strength and funding of the institution and in recent times, their reputation, visibility, advancement and ranking (Creamer, 1998; Carrim & Wangenge-Ouma, 2013). Academics

are under great pressure to do research and to publish and there is great emphasis on their research productivity. This suggests that the number of publications is far more influential in shaping one's career trajectory than is the quality of the research conducted.   As academics are pressured to publish in accredited journals, academic libraries have to ensure that they stock these publications in their collections or have electronic access to it. Thirdly, the implication of the above pressure means that the quality of a library's research collection is an indication of its strength in supporting the research endeavours. Herein lies the value of the thesis given that there has been a push for academics to publish by the university and Department of Education and this makes libraries exclusive spaces.

Fourthly, the issues of the changes in the higher education landscape have a domino effect on the university research agenda (*Council on Higher Education*, 2006a, 2006b, 2009; Cranton, 1997; Darries, 1997; Department of Education, 1997; Department of Higher Education, 2013; Gultig, 2000; Hartley, *et al.*, 2005; North, 2011) and in turn on library spaces. Libraries play the role of service providers and the nature of libraries is changing with the increasing influence of ICT, on their use and design. The debate involves the library as a place focusing on the human experience of inhabiting a space and the emotional and physical relationships users have with it (Bennet, 2005; Demas, 2005; Freeman, 2005; Shill & Tonner, 2003; Shill & Tonner, 2004). The role of the library as a storehouse is changing to a space for users, for their individual and collaborative work and a space for social activity. It has to perform this role while integrating print-based and electronic knowledge and becoming an active participant in the educational process (Dendrinos, 2005; *Higher Education Funding Council for England*, 2002; Housewright & Schonfeld, 2008; Jankowska, 2004).

Finally, the literature also provided insights into the use of the libraries, the information-seeking behaviour of academics (CURL & RIN, 2007, Kuruppu, 1999, Wisneski, 2005, Zhang, 1998), their use of the electronic resources like electronic journals and electronic books (Hoagland & Clougherty, 2002) and how libraries are tracking this usage by circulation counts, gate counts and citations (Shill & Tonner, 2004, de Jager, 2005) and the value of

academic libraries to academics and postgraduate students (Jankowska, 2004). The final theme in the literature review is the impact of technology on the library and its users and the preference for the virtual (Borgman, 1985, Bonk, 1995, Ovadia, 2009), the relationship between technology and learning, and the impact on the concept of the physical space.

Most of these studies have taken place in the developed countries of the North hemisphere and there is an abundance of information on the physical libraries, and the redesign and reconfiguration of the space, but there is a gap in the literature on the virtual library and how academics use the virtual library to conduct their research, and the choices that are made between physical and virtual libraries. The virtual library has changed academic work practices and ethics allowing them the flexibility and mobility to work anywhere anytime. Since access to information, technology has changed so much over the last fifteen years, that the validity of older studies for comparison with the situation today may be questioned. Most of the studies reviewed have been largely dominated by those done in the North, there is a lack of this research in the South. The redesigning of the libraries in the North has taken place in the last fifteen years and this phenomenon has taken root in South Africa in the last 10 years because the country is also subject to many of the same forces and influences that have impacted and are impacting on societies to the North.

The study gave prominence to Coccioli (2010) and Pomerantz and Marchinionini (2007) who highlight the abundance of writings and research on library as physical space (Aabo, 2012; Bennett, 2005; Collard, 2012; Demas, 2005; Antell & Engel, 2004; Freeman, 2005; Gayton, 2010).

Methodologically, in keeping with the globalised nature of research and in recognition of the impact of technology on academic enquiry, an online survey was used for the study (Alreck & Settle, 2004; Fink, 2009; Sue & Ritter, 2012). The online survey was a challenge as 38.8 per cent of the academics in the School of Education chose not to respond to this, either by deleting the survey after reading it or by not reading the survey at all. I had to

accept that certain types of individuals are more likely to refuse to respond and the non-response may also suggest a lack of familiarity with web technology, which could be seen in their non-utilisation of library technology.

Theoretically, the major insight derives from Lefebvre's conceptual triad which was used for this study where he presents three concepts, lived or representational spaces, representations of space or conceived spaces and perceived spaces or spatial practice. Space is understood as a triadic construct in the sense that it is a creation, a site of production and a site to be experienced and consumed; so time spent there both affects the academic and the research. I conclude with the words of Lefebvre (1991, p. 66-67) who suggests that an understanding of the production of space should be: "allowed 'free rein' and should therefore not be constrained by preconceived theoretical ideas. A new concept, is that of the production of space must 'operate ' or 'work' in such a way as to shed light on processes from which it cannot separate itself because it is a product of them. Our task, therefore, is to employ this concept by giving it free rein, once it has illuminated and thereby validated its own coming-into-being, the production of space (as theoretical concept and practical reality in indissoluble conjunction) will become clear" (Lefebvre, 1991, p. 66-67).

This was used to illustrate that the use of the library space by academics is always changing as conceptions, perceptions, and lived experiences change. The conceptual triad puts conceptualising (mental activities or the life of the mind) in conscious, interactive relationship with both sensation (the life of the body) and meaning (unmediated lived experience) (Carp, 2012; Goonewardena *et al., 2008;* Lefebvre, 1991; Milgrom, 2008; Schmid, 2008; Soja, 1996, 2001).

7.2 Towards understanding academic library use

The findings have revealed that each element of Lefebvre's triad represents an aspect of the academics production of the library space. The library space that is produced and experienced, is also producing a space through experience because these processes occur simultaneously. The conceptual triad allows the library to be approached from a physical standpoint or from the point of view of the lived experiences of the users. The study offers a model and 4 significances emerge. So although users do not operate in terms of a distinct library identity, they are shifting their understanding of the spaces. The significance is that library and academics and their relationship is in a new space and this is not fixed.

In drawing from Lefebvre the following model has been abstracted from significant insights from the findings of the study. This model responds to the final critical question on how academic users theorise their understanding of the library space.
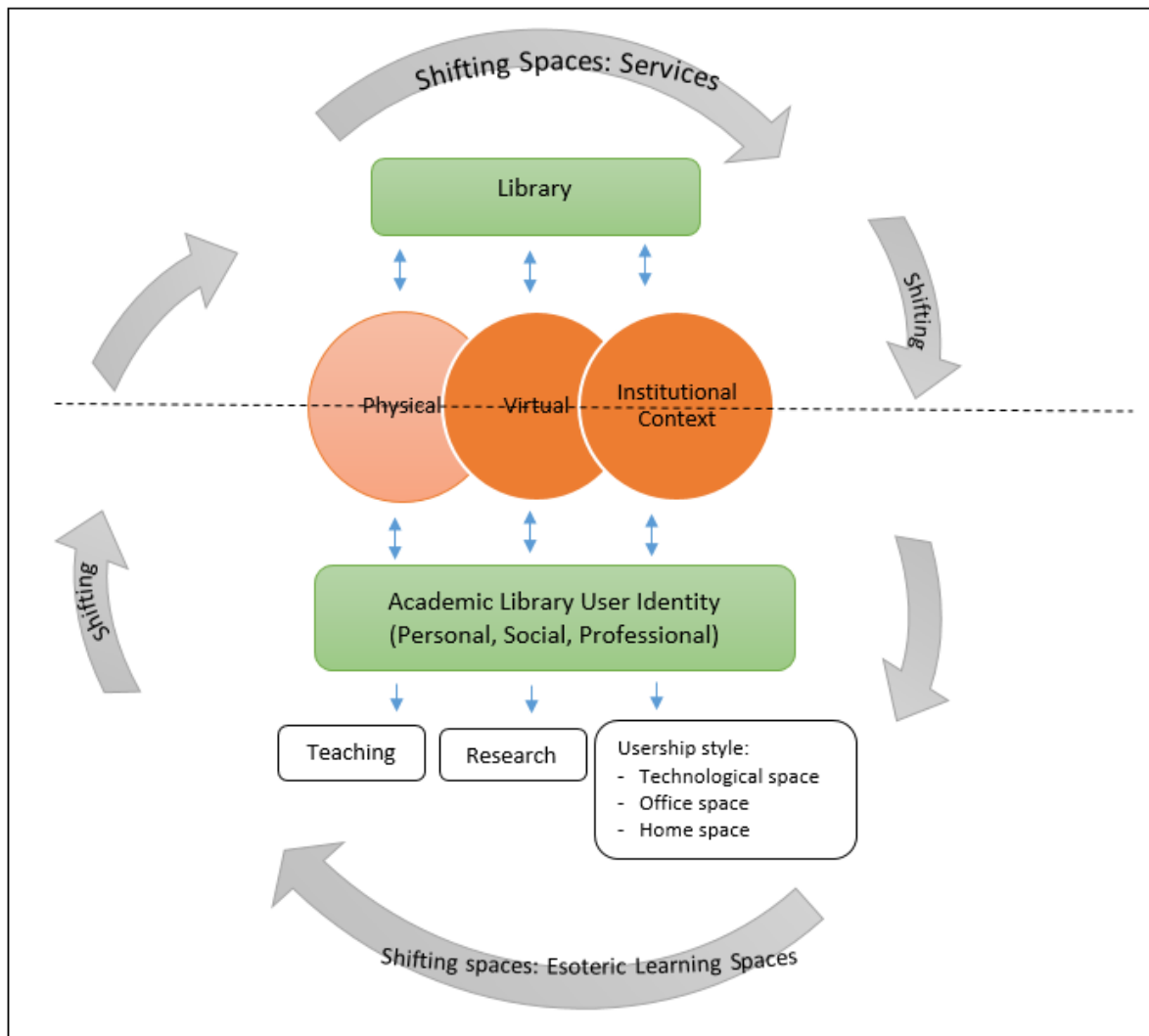
Figure 7.1 Spatial model of the understanding of library spaces by academics

In Figure 7.1, the model illustrates that the library has a physical, virtual and institutional context and it operates within that complex. This is a distinctive place with a particular role (lived space) that was in existence before the presence of individuals or groups. There is an ongoing relationship between the three contexts and the library. The relationship between Library and user is clearly related. It is a continuous two-way relationship and process in which users (societies) create and shift in spaces while simultaneously being influenced by them in various ways.

The traditional library that offered services for the storage, access and preservation of material is shifting to one that offers new information and communication technologies that enhance the learning experience and embody new pedagogies, including collaborative and interactive learning modalities. The library is the only centralised location where new and emerging information technologies can be combined with traditional knowledge resources in a user-focused, service-rich environment that supports the current social and educational patterns of learning, teaching, and research. Whereas the technology has tended to isolate people, the library, as a physical place, has done just the opposite. Within the institution, as a reinvigorated, dynamic learning resource, the library can once again become the heart of the intellectual community and scholarly enterprise.

Academics and the Academic library operate within the context of physical, virtual and institutional spaces and there is a relationship between the physical, virtual and institutional context and the academic library user's identity. Academics can conduct their teaching, and research in spaces they prefer because of their mobility and flexibility. Their user style is that of an emergent technological user. This style reflects that they are influenced by their experience of the library and their experience influences the library. The physical and the virtual library have been fused.

The blue arrows from the Academic Library User Identity in this model represent the forces that currently have strong impact in the scholarly life of academics. The physical, virtual and institutional contexts act upon the library spaces and on the academic; and the library space has then an impact on the academic in respect of resources, services and facilities. Doing research involves the content of the information resources, not the physical desk. It is about the learning that the academic or student experiences. All of this operates within a shifting space. The production of space is a repeated process, that space is always shifting as conceptions, perceptions and lived experiences shift.

In using Lefebvre's triad, the library space is produced and experienced by the academic (through Teaching, Research and styles of use) and they produce the space through their experience from service to esoteric learning spaces. The changes in society, ICT, pedagogy, HE and universities are reflective of changes in the library domain. Changes in society drive the changes in library space.

Four significances emerged from the study, which are illustrated in figure 7.1: there is a convergence of the academic identity with the library identity, a synergy between the shifting spaces: services and shifting spaces esoteric learning spaces, a fusion of the physical and virtual spaces and finally, their vision for the library.

7.2.1 Convergence of the Academic identity with the Library identity

In figure 7.1 the grey circular arrows denote convergence between the library identity and academic identity – their personal, social and professional identity. The identity of the library is very closely tied to the identity of the institution - the corporate identity of the university. The library identity of the academic is fluid, dependent on where they sit, where they spend time and dependent on their method of supervision. There is a stark library identity. Hanson (2009, p.554) states that: "Academic identities are defined by three key aspects: the discipline; the institution; and a sense of the profession, with a great allegiance to the discipline". Data from my study suggest that the academic professional identity is intact but that academics have become emergent technological users, using the technology as if they have mastery over it although a large section of this population has little technological skill. Technology still bewilders them. Academics profess to only use technology and not the physical space, and when they experience difficulties or when it comes to the sophisticated searches, they are lost and they do not seek assistance.

Despite not knowing about the library and all its resources, they are still getting by and producing research. The whole idea of a research library is not confined to a space, it is

linked to research process and access to necessary support and resources. Academics are behaving in this way in order to achieve the end of research, and their workloads allow them the flexibility and mobility to do just that.

In figure 7.1, it is noted that the academic library user identity is visible as they decided where their tasks are performed, illustrated by the green box their library identity is invisible and the library has a separate identity as well, also illustrated by the green box. The reason for this thinking is that the library is invisible to the academic. It is falling off the radar screens of academics. The library has become dissociated from the actual research processes. They circumvent the library in doing research, preferring to access resources directly. Even though the library is a gateway to the information resources that they are dependent on, this is invisible to researchers. They understand it as a physical space and suggest that they are not familiar with the technology.

The data suggests that their library identity is very closely linked to who they are, how they do research and where they do the research. The prolific researchers are working from wherever the necessary infrastructure is available. It was found that the office space was their main area of work, followed by their homes and then the library. As discussed in the literature review, their offices are their lived spaces.

The academics lived space is a space that is located between the daily routine and the practices and infrastructure of daily life. The data is suggesting that academics' understanding of the library has come through their use or their non-use of the library. Their understanding has gravitated towards use and that has snookered understanding it in a philosophical way. They use their existing knowledge about the library space and this has changed over time from their undergraduate days to their positions as academics. Certain processes that need to fit the physical entity allow for these things to be managed. The library as a place represents personal memories. They do not have permanent meaning,

their meaning re-negotiated continually and therefore their contribution to the academic's is never the same

Stressing the different ways in which academics work, puts their commonality into perspective. These academics revealed that their work style may differ from the conditions and routines of other professions where they have the freedom to set one's hours, to pursue one's intellectual interests, to consult and meet with students at their convenience and to participate in a myriad of administrative and other activities on campus within wider bounds than exist elsewhere.

Figure 7.1 illustrates that their work styles have changed due to the advances in information technology, the way that students learn and collaborate in the learning process. There are 3 contexts within which the academics perform, their teaching, research and styles of use. This is illustrated by the arrows flowing out of the academic identity. The university with its *Framework for Workloads* has enabled this mobility and flexibility. The pervasive nature of information technology has made it possible for them to have flexible work schedules and communicate with their students, use the resources from anywhere.   Academics do not value the physical library because their research needs are met by the access of the technology from their offices, but the value of the library is for their students. The thinking is 'I do not need you, but my students do.' This is especially true in the South African environment where some students do not have access to the technology and a space to study and work collaboratively.

Many academics are unaware of the potential services and resources available to them and will only ask for what they already know about. The survey revealed that of all the services the library offers, the one used most often by academics is interlibrary loans.   Many academics do not know much about the processes of interlibrary loans, particularly that it can be requested form their desktops. They use it as a last option source and it is one of the

few reasons that they enter the physical building. When they do talk of interlibrary loans, it is only in relation to the physical space, not virtual with the library on your desktop.

In their understanding of the library spaces, they do not see this as being the understanding of a distinctive library user; as someone having a library identity. They have shifted the spaces and minimal visits are indicated by the data. The shifting spaces are illustrated in figure 7.1 as physical spaces, and a synergy between the conceived and perceived spaces.

7.2.2   Synergy between Esoteric learning spaces: Conceived spaces and Perceived spaces

In the model presented above, academics are seen presenting their traditional view of the library and their histories and visions as perceived rather than conceived spaces. The library has certain physical features, services and facilities as a conception. This public identity is common to the various communities of knowledge. The perceived space symbolises the traditional space and it emphasises the sense of belonging and emotional ties to a place. They are profound centres of meaning. This meaning is constructed out of their lived experiences. By giving meaning to libraries, academics change spaces into places and as such it becomes part of their identity. Academics display a tendency to identify with the library (even though their usage does not reflect that). They form bonds with the place and this forms part of their identity. The findings revealed that the academics' have a notion of the library as a symbolic space, a conceived space or a representation. The symbolic space transcends the physical space. This aspect refers to the mental activity about the physical space. Kuh states that: "campuses and individual buildings as symbols or allegories may have a significance in supporting learning, where the physical and the emotional become inextricably intertwined to form an almost palpable 'sense of place', one that has profound if not always clearly understood meaning to many members of the campus community' (Kuh, 2005, p. 93).

In this study, the academics displayed a perception (physical space) of the library space more than a conception (mental space). As much as the academics indicated that it is a symbolic space and is the heart of the university and that no institution can survive without a library, their use and understanding indicate that it is their perception rather than a conception of the space. This is reflected by the shifting spaces (grey arrow) from shifting spaces: services to shifting spaces: esoteric learning spaces. The black line across the Venn diagram indicates that division.

Their students become the conduit or mediators of access to the searches. The students access knowledge for the top researchers. These students have structured well thought-out usage of the library which is linked to successful research. The academics are replacing themselves largely in offices. It is business as usual for the academics with a continuation of the current situation.

The changing landscapes of the library enables some forms of information provision and service with some diminishing and others expanding, and all changing their nature considerably from a passive information provider to more active involvement in teaching and research, to provision of study spaces extending into a social space dimension.

7.2.3. Fusion of the Physical and Virtual library

Figure 7.1 illustrates that there are 3 strains to the library spaces: physical, virtual and institutional contexts. There is a fusion of the physical and virtual library or of Lefebvre's lived spaces and representational spaces which is represented by the shading of the Venn diagram moving from a lighter shade for physical to a darker shade for virtual and institutional contexts. The physical becomes progressively less and less important to the academic, The office is their representational space or lived space. Academics do not

require the physical spaces as much because as reported in the data, they are purchasing personal copies of texts required for their offices and homes with their research and other funds. They are also not using the physical space of the library for a variety of reasons such as the noise factor and limited space at the Edgewood Library, insufficient quiet space, availability of computers, printers and photocopiers which they can do in the comfort of their homes or offices.

Figure 7.1 presents a view of the library as a place, which encompasses both physical and virtual libraries. The focus of this model is the space itself, whether a physical or a virtual space. The space must exist prior to any of the other elements of this model manifesting: prior to materials being collected. Materials, whether physical or digital, are brought into the space through the process of collection development, and the space functions as storage for these materials. Additional value is added to the space through organisational structures that facilitate access to material stored in it, and prior to people coming to it and experiencing it. Users then come to the space (physically or virtually) to use the materials stored in it. This use, situated in the space, causes the user to have an experience of the space, the materials, any other library stakeholders present, and the ideas embodied in the materials.

The traditional library is impacted by the virtual and technological or hybrid library as academics regard both print and electronic material as essential information resources now and for the foreseeable future. The availability of information from online sources is increasingly important

Academics also do not see the link between the library and e-resources. This access is facilitated by the library. There is no direct overt link. There is a recognition that the library facilitates access, but this is not acknowledged when academics experience difficulties or need assistance with these resources, because they are not turning to the library when this happens. There is a decreased perceived dependence by academics because they are less

aware of the library's role in providing the tools and services they use in the virtual environment.

Figure 7.1 also represents the institutional context within which the library has to function. The library will exist in the university, irrespective of what changes occur for its different stakeholders. It is a space necessary for students and academics. Universities are ranked and rated on their library spaces. The library has to follow the vision, mission and goals of the institution. The library functions as an integral and interdependent part of the institution's total educational experience.

7.2.4 Vision for the library

Explanations of the library space become highly introspective and individualised. Academics do not have a vision for the library, if they do have a vision it is very limited to their situation and experience of the library, it is very practical. As a result of them not knowing about the library, they cannot envision its future and their future is largely driven by sociological factors, historical hangovers and their present situation.

Lefebvre's triad speaks of the second concept – conceived spaces which refers to the thinking, theorising and conceptualisations, the materialisation of ideas. This is the mental activity about the space which may exist distinctively on paper, in words but not physically present. Academics in the survey did not display an understanding of this. Their understanding of the space is very elementary. This vision is linked to overseas libraries and it seems like their conceptions of future space are still very physical and that they are here to stay. They are trapped by that. For themselves as academics, they could not see the vision for the library, but for their students they could. Their vision is largely driven by the physical entity and they are fixated by that physical entity and there is no specific vision for the virtual.

In figure 7.1 there is an idea that there is no specific vision for the library, it operates within a shifting space. The institutional context dictates that there should be a library. The thinking is that every institution needs a library.

What results is an emergent technological user. The emerging technological or virtual user is the new academic identity of the library user. The physical spaces merge into esoteric learning spaces. This thesis is suggesting and the figure 7.1 illustrates that the academic is coming through with a very particular identity, his or her user style is different, the lived space is different, and the use of the library space is different.

7.3 Concluding remarks

Two trends are apparent: first, although electronic sources can technically be accessed from any location, academics are highly dependent upon their own institutions' libraries and their ability to fund and provide the appropriate and increasing range of electronic information sources. Second, academics who continue to need access to physical materials such as books are likely to build up a reasonably extensive departmental or private collection of essential reference material, and rely heavily upon the inter-library loan services offered by their own institutions' libraries. The use and importance of any other research information providers is relatively low. This concurs with the findings of the different authors (CURL & RIN, 2007, Korobili, 2005, Rupp-Serrano, 2013, Smith, 2003).

We need a better understanding of the role of space in the dynamics of creating more productive higher education communities and its connection to learning and research. This should be the subject of further research. Technological change is said to be affecting the nature of learning itself, as well as the ways in which it takes place. Further technological change will be equally unpredictable. Almost all the academics in this study were complying

with the demands of the University research requirements and performing at the level required for their performance management assessment.

Academic library services are failing to deliver the right kinds of training, advice and guidance to academics on finding, accessing and using electronic resources. Not only that, but academics are often unaware of existing advice and guidance opportunities, the existing interventions are not being delivered in the most appropriate ways, at the optimum times and by the most effective people. Library services, including inter library loans and document delivery services are of high importance to all academics but the need for timeliness and speed in research appears often to be undermined by the slowness of response and results from centralised services.

One of the key lines of enquiry for this study has been to establish the extent to which academics rely on libraries and we see that the value of the library as a place has evolved. Early universities paid little attention to the library as a place except for storage. This changed with the scientific revolution, when discovery and knowledge became the purpose of the university. The integration of technology into the very fabric of the library is of paramount importance, and while librarians cannot predict changes in technology better than any others, a relationship should be developed between humans and technology. The changes in library roles discussed thus far have obvious consequences for library facilities. Once the physical centrepiece of a campus with large, central collections, library resources are now more distributed and the library users are more nomadic. The challenge is two-fold: reconceiving library buildings to reflect changing user behaviour and needs, and developing the library's network presence as a virtual place of comparable value. While the nature of library facilities will change, the notion of *library as place* remains important in both physical and virtual contexts. The key element is to move the librarian out of the traditional library setting, whether physical or virtual into a new framework for providing library services. There is a decided move away from the concept of library as space to idea of library as a service.

The use of the library, both in terms of temporal and spatial factors revealed how academics are meeting their teaching and research needs, how frequently this information is sought, the importance and usefulness of both print and electronic resources and how information technology has been the deciding factor in where academics access this information, either from the comfort of their homes and offices or physically visiting the library. Most often it is not about the library's physical space, but it is about the flexibility of their work schedules, convenience, speed and time and infrastructure available to them that decides where academic tasks are performed.

In the current dynamic information environment, information-seeking behaviours of users change and evolve with emerging technologies and information dissemination systems. University libraries have for decades played critically important roles in supporting research and the academic endeavour in all subjects and disciplines within their host university. But the last decade has brought a massive change in the relationships between academics and libraries (Bryant *et al.*, 2009). Technological developments and the availability of information resources online have changed how research is done, and also the services and resources that university libraries provide to their researchers.

The library as a physical space is enduring. Academics are reducing their use of library spaces for discovery purposes and therefore seem to put less value on the library's traditional intellectual role as a gateway to information. However, these academics continue strongly to support the library's collection and preservation roles. Despite all of this, even though academics are using the library from their offices, there will still be a need for libraries. Even if technology changes, and it will change, the need for libraries will still exist. The demise of the library as presaged by Bennet (2005) and Latimer (2011) and confirmed to some extent by the data of this study that the academic library will change the way it offers its services, but there will still be a need for it and the expertise of the librarians. It is the exclusivity of library spaces that contributes to its enduring nature. These dynamic spaces are exclusive because they are used differently by the different users. The information age carries the potential of introducing significant change in higher education,

although it is unlikely that the basic functions of traditional academic institutions will be utterly transformed or that the basic traditional functions of libraries will be changed completely.

List of References

Aabo, S., & Audunson, R. (2012). Use of library space and the library as place. *Library & Information Science Research, 34*, 138-149.

Abels, E., Liebscher, P., & Denman, D. W. (1996). Factors that influence the use of electronic networks by science and engineering faculty at small institutions. *Journal of the American Society for Information Science, 47*(2), 146-158.

Abram, S. (2005). Web 2.0 huh?! Library 2.0, librarian 2.0. *Information Outlook, 9*(12), 44-46.

Academy of Science of South Africa. (2006). *Report on a strategic approach to research publishing in South Africa*. Pretoria: Author.

Academy of Science of South Africa. (2010). *The PhD study: an evidence based study on how to meet the demands for high-level skills in an emerging economy*. Pretoria: Author.

Alexi Mermot Associates. (2006). *Spaces for learning: a review of learning spaces in further and higher education*. Edinburgh: Scottish Funding Council.

Alreck, P. L., & Settle, R. B. (2004). *The survey research handbook*. Boston: McGraw-Hill.

Altbach, P. J. (Ed.) (1996). *The international academic profession: portraits of fourteen countries*. Princeton, NJ: The Carnegie Foundation for the Advancement of Teaching.

Amster, M. H. (2008). The social optics of space: visibility and invisibility in the borderlands of Borneo. *Space and Culture, 11*, 176-195.

Antell, K., & Engel, D. (2006). Conduciveness to scholarship: the essence of academic library as place. *College and Research Libraries, 67*(6), 536-556.

Applegate, R. (2009). The library is for studying: student preferences for study space. *Journal of Academic Librarianship, 35*(4), 341-346.

Archer, A., & Richards, R. (Eds.). (2011). *Changing spaces: writing centres and access to higher education*. Stellenbosch: Sun Press.

Armstrong, C., & Lonsdale, R. (2009). *E-book use by academic staff and students in UK universities: focus groups report*. London: Joint Information Systems Committee, UK Higher Education Funding Councils.

Ashcroft, B., Griffiths, G., & Tiffin, H. (1998). *Key concepts in post-colonial studies*. London: Routledge.

Atkinson, R. (1996). Library functions, scholarly communication, and the foundation of the digital library: Laying claim to the control zone. *Library Quarterly, 66*(3), 239-265.

Baatjies, I. G. (2005). *Neoliberal fatalism and the corporatisation of higher education in South Africa*. Durban: University of KwaZulu-Natal Centre for Civil Society.

Babbie, E., & Mouton, J. (1998). *The practice of social research*. Cape Town: Oxford University Press.

Bak, N. (2004). *Completing your thesis: a practical guide*. Pretoria: Van Schaik.

Balkaran, N. (2007). *Teacher desegregration in KwaZulu-Natal: a spatial analysis.* (Doctoral degree), University of KwaZulu-Natal, Durban.

Ball, S. J. (2010). The teacher's soul and the terrors of performativity. *Journal of Education Policy,* 18(2), 215-228.

Bane, A. F., & Milheim, W. D. (1995). Internet insights: how academics are using the Internet. *Computers in Libraries, 15*(2), 32-36.

Barber, M., Donnelly, K., & Rizvi, S. (2013). *An avalanche is coming: higher education and the revolution ahead*. London: Institute for Public Policy Research.

Barnett, R., & Griffin, A. (1997). *The end of knowledge in higher education*. London: Cassell.

Bawden, D., & Robinson, L. (2012). *Introduction to information science*. London: Facet.

Bazillion, R. J., & Braun, C. (1995). *Academic libraries as high-tech gateways*. Chicago: American Library Association.

Beagle, D. (2000). Web-based learning environments: do libraries matter? *College and Research Libraries*, 362-379.

Beard, C., & Bawden, D. (2012). University libraries and the postgraduate student: physical and virtual spaces. *New Library World, 113*(9/10), 439-447.

Beard, J., & Dale, P. (2010). Library design, learning spaces and academic literacy. *New Library World, 111*(11/12), 480-492.

Bellas, M. L., & Toutkoushian, R. K. (1999). Faculty time allocations and research productivity: gender, race and family effects. *Review of Higher Education, 22*(4), 367-390.

Benko, G., & Strohmayer, U. (Eds.). (1997). *Space and social theory: interpreting modernity and postmodernity*. Oxford: Blackwell.

Bennett, S. (2003). *Libraries designed for learning*. Washington, DC.: Council on Library and Information Resources.

Bennett, S. (2005). Righting the balance. *Library as place: rethinking roles, rethinking space.* (pp. 10-24). Washington, DC: Council on Library and Information Resources.

Bennett, S. (2006). The choice for learning. *The Journal of Academic Librarianship,* 32(1), 3-13.

Bennett, S. (2011). Learning behaviours and learning spaces. *Portal: Libraries and the Academy, 11*(3), 765-789.

Bentley, K., Habib, A., & Morrow, S. (2006). *Academic freedom, institutional autonomy and the corporatised university in contemporary South Africa*. Cape Town: Council on Higher Education.

Berger, A. A. (2004). *Media and communication research methods*. London: Sage.

Beyes, T., & Michels, C. (2011). The production of educational space: heterotopia and the business university. *Management Learning, 42*, 521-536.

Bhabha, H. (1994). *The location of culture.* London: Routledge.

Biesta, G. J. J., & Egea-Kuehne, D. (Eds.). (2001). *Derrida and education*. London: Routledge.

Biggs, J. (2002). Corporatised universities: an educational and cultural disaster. In J. Biggs & R. Davis (Eds.), *The subversion of Australian universities* (pp. 184-222). Wollongong: Fund for Intellectual Dissent.

Black, A., Pepper, S., & Bagshaw, K. (2009). *Books, buildings and social engineering: early public libraries in Britain from past to present*. Farnham, UK: Ashgate.

Blom, N. (2013). Knowledge-based economy driven by postgraduates. *Business Day Live*, 2 October 2013

Bodnar, J. (2009). Information and learning commons, faculty and student benefits. *New Library World, 110*(9/10).

Bondi, L. (2005). Troubling space, making space, doing space. *Group Analysis, 38*, 137-149.

Bonk, S. C. (1995). Electronic information technologies and resources: use by university faculty and faculty preferences for related library services. *College and Research Libraries, 56*(2), 119-131.

Borbinha, J. L. (2002). *The digital library: taking into account also the traditional library*. Paper presented at the Elpub2002, Berlin.

Bouazza, A. (1999). Information user studies. In A. Kent (Ed.), *Encyclopedia of Library and Information Science* (Vol. 44, pp. 144-164). New York: Marcel Dekker.

Bradbury, K., & Weightman, A. (2010). Research support at Cardiff University Library. *SCONUL Focus, 50*, 65-70.

Brenner, N. (1998). Between fixity and motion: accumulation, territorial organization and the historical geography of spatial scales. *Environment and Planning D: Society and Space, 16*(5), 459-481.

Brown, S., & Swan, A. (2007). *Researchers' use of academic libraries and their services: a report commissioned by the Research Information Network and the Consortium of Research Libraries*. Southampton: Consortium of University Research Libraries, and Research Information Network.

Bryant, J., Matthews, G., & Walton, G. (2009). Academic libraries and social and learning space: a case study of Loughborough University Library, UK. *Journal of librarianship and information science, 41* (1), 7-18.

Buchanan, N. (2008). *A history of the University of Natal Libraries, 1910-2003.* (Doctoral degree), University of KwaZulu-Natal, Durban.

Budd, J. M. (1995). Faculty publishing productivity: an institutional analysis and comparison with library and other measures. *College and Research Libraries, 56*(2), 547-554.

Bundy, A. (2003). A window of opportunity: libraries in higher education. *Library Management, 24*(8/9), 393-400.

Carlson, S. (2001). The deserted library. *Chronicle of Higher Education, 48*, A35-38.

Carlson, S. (2006). Library renovation leads to soul searching at Cal Poly. *Chronicle of Higher Education*, 53(2), 63

Carp, J. (2012). "Ground-truthing" representations of social space using Lefebvre's conceptual triad. *Journal of Planning Education and Research, 28*(2), 129-142.

Carter, E., Donald, J., & Squires, J. (Eds.). (1993). *Space and place: theories of identity and location*. London: Lawrence & Wishart.

Catalano, A. (2010). Using ACRL standards to assess the information literacy of graduate students in an education program. *Evidence Based Library and Information Practice, 5*(4), 21-38.

Catalano, A. (2012). Patterns of graduate students' information seeking behaviour: a meta-synthesis of the literature. *Journal of Documentation, 69*(2), 243-274.

Cebhekulu, E., & Mantzaris, E. (2006). Labour pains and university mergers: the case of UKZN. *Alternation, 13*(1), 182-202.

Cebhekulu, E., & Mantzaris, E. (2006). Stop beating about the bush: the UKZN merger: a tragic mishap. *Alternation, 13*(1), 88-105.

Chandler, D. (2002). *Semiotics: the basics*. London: Routledge.

Check, J., & Schutt, R. K. (2012). *Research methods in Education.* London: Sage.

Clayton, M. (2000, 7 November). Pressuring professors to put in more face time. *Christian Science Monitor*. Retrieved from http://search.csmonitor.com/durable/2000/11/07/fp13sl-csm.shtml

Cocciolo, A. (2010). Alleviating physical space constraints using virtual space? *Library Hi-Tech, 26*(4), 523-535.

Cohen, L., Manion, L., & Morrison, K. (2000). *Research methods in education* (5th ed.). London: Routledge
.
Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6th ed.). London: Routledge.

Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education* (7th ed.). London: Routledge.

Consortium of University Research Libraries, & Research Information Network. (2007). *Researchers' use of academic libraries and their services* London: Author.

Cook, C., & Heath, F. M. (2001). Users' perception of library service quality: a LibQUAL+ qualitative study. *Library Trends, 49*(4), 548-584.

Council on Higher Education. (2006). *Towards a new higher education landscape: meeting the equity, quality and social development imperatives of South Africa in the 21st century.* Pretoria: Author.

Council on Higher Education. (2009). *The state of higher education in South Africa: a report of the CHE Advice and Monitoring Directorate*. Pretoria: Author.

Council on Library and Information Resources. (2008). *No brief candle: reconceiving research libraries for the 21st century*. Washington, DC: Author.

Covert-Vail, L., & Collard, S. (2012). *New roles for new times: research library services for graduate students*. Washington, DC: Association of Research Libraries.

Crang, M., & Thrift, N. (Eds.). (2000). *Thinking space.* London: Routledge.

Cranton, P. (1997). Higher education: a global community. *New directions for teaching and learning, 72*, 5-9.

Cresswell, J. W. (2008). *Educational research: planning, conducting and evaluating quantitative and qualitative research.* Boston, MA: Pearson.

Cresswell, J. W., & Clark, V. L. P. (2008). *The mixed methods reader*. Los Angeles: Sage.

Creswell, J. W. (2014). *Research design: qualitative, quantitative and mixed methods approaches.* Los Angeles: Sage.

Darries, F. (2004). Internet access and use in reference services in higher education institutions in South Africa. *South African Journal of Librarianship and Information Science, 70*(2), 72-85.

De Jager, K. (2005). The role of academic libraries in the enhancement of information literacy: a study of Fort Hare Library. *South African Journal of Librarianship and Information Science, 71*(3), 259-267.

Deleuze, G., & Guattari, F. (1986). *Kafka: toward a minor literature*. Minneapolis, MN: University of Minnesota Press.

Deleuze, G., & Guattari, F. (1994). *What is philosophy?* London: Verso.

Demas, S. (2005). From the ashes of Alexandria: what's happening in the college library? *Library as place: rethinking roles, rethinking space* (pp. 25-41). Washington, DC: Council on Library and Information Resources.

Dendrinos, M. (2005). From the physical reality to the virtual reality in the library environment. *Library Philosophy and Practice*. Retrieved from http://digitalcommons.unl.edu/libphilprac

Denscombe, M. (2002). *Ground rules for good research: a 10 point guide for social research.* Maidenhead, Berkshire: Open University Press.

Denscombe, M. (2010). *Ground rules for social research: guidelines for good practice.* (2nd. edn). Maidenhead, Berkshire: Open University Press.

Dewey, B.I. (2004) The Embedded Librarian. *Resource Sharing & Information Networks,* 17 (1-2), 5-17, Retrieved from DOI: 10.1300/J121v17n01_02

Dewey, J. (1958). *Art as experience*. New York: Capricorn.

Dewey, J. (1961). *Democracy and education*. New York: Macmillan.

Dhunpath, R., & Govender, K. (2012). *Student experiences of the PhD cohort model: Working within or outside communities of practice?* Durban: University of KwaZulu-Natal.

Dhunpath, R., & Vithal, R. (Eds.). (2012). *Alternative access to higher education: underprepared students or underprepared institutions?* Durban: UKZN.

Dickenson, D. (2006). How students and faculty use academic libraries differently (ED3/110.10/No. 242). Retrieved from http://www.lrs.org/documents/fastfacts/242_ALIS_2_KL.pdf

Doiron, R., & Asselin, M. (2011). Exploring a new learning landscape in tertiary education. *New Library World, 112*(5/6), 222-235.

Donkai, S., Toshimori, A., & Mizoue, C. (2011). Academic libraries as learning spaces in Japan: toward the development of learning commons. *The International Information and Library Review, 43*(4), 215-220.

Edwards, R., & Usher, R. (2000). *Globalisation and pedagogy: space, place and identity*. London: Routledge.

Eigenbrodt, O. (2008). *Societal places: the constitution of library space through activity*. Paper presented at the 74th IFLA General Conference and Council, World Library and Information Congress, Quebec, Canada. http://www.ifla.org/IV/ifla74/index.htm

Elmbrog, J. K. (2011). Libraries as the spaces between us: recognising and valuing the Third space. *Reference and User services quarterly, 50*(4), 338-350.

Engel, D., & Antell, K. (2004). The life of the mind: a study of faculty spaces in academic libraries. *College and Research Libraries, 65*(1), 8-26.

English, P. W., & Mayfield, R. C. (1972). *Man, space and environment*. London: Oxford University Press.

Fairweather, J. S. (2002). Variations in faculty work at research universities: implications for state and institutional policy. *Review of Higher Education, 26*(1), 97-115.

Fink, A. (2009). *How to conduct surveys: a step-by-step guide*. Los Angeles: Sage

Foster, N. F. (Ed.)(2014). *Participatory design in academic libraries: new reports and findings.* Washington, DC: Council on Library and Information Resources.
.

Freeman, G. T. (2005). The library as place: changes in learning patterns, collections, technology, and use. *Library as place: rethinking roles, rethinking space* (pp. 1-9). Washington, DC: Council on Library and Information Resources.

Gad-el-Hak, M. (2013). Publish or perish: an ailing enterprise? *Physics Today, 57*(3), 61-64.

Gao, S.-J., Guo, J. X., & Duan, X.-L. (2011). The study of library use and document gathering behavior: a survey of geomatics faculty at Wuhan University, China. *Library Collections, Acquisitions & Technical Services, 35*(1), 19-28.

Gaur, A. S. (2006). *Statistical methods for practice and research: a guide to data analysis using SPSS*. Los Angeles: Response.

Gayton, J. (2008). Academic libraries: 'social' or 'communal'? The nature and future of academic libraries. *Journal of Academic Librarianship, 34*(1), 60-66.

Ge, X. (2010). Information-seeking behavior in the digital age: a multidisciplinary study of academic researchers. *College and Research Libraries, 34*(2), 435-455.

Gelfand, J. (2005). Library as changing place: viewpoints from university undergraduates. *Library Hi-Tech News, 22*(4), 10-12.

Genosko, G. (Ed.) (1996). *The Guattari reader*. Cambridge, MA: Blackwell.

Georgina, D. A., & Hosford, C. C. (2009). Higher education faculty perceptions on technology integration and training. *Teaching and Teacher Education, 25*(5), 690-696.

Gerke, M., & Manness, M. (2010). The physical and the virtual: the relationship between library as place and electronic collections. *College and Research Libraries, 71*(1), 20-31.

Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P., & Trow, M. (1994). *The new production of knowledge: the dynamics of science and research in contemporary societies*. London: Sage

Given, L. M., & Leckie, G. B. (2003). "Sweeping" the library: mapping the social activity space of the library. *Library and Information Science Research, 25*(4), 365-385.

Glazier, J. D., & Powell, R. R. (Eds.). (1992). *Qualitative research methodologies for library and information science: an introduction*. Littleton, CO: Libraries Unlimited.

Goonewardena, K., Kipfer, S., Milgrom, R., & Schmid, C. (2008). *Space, difference, everyday life: reading Henri Lefebvre*. New York: Routledge.

Govinder, K. S., Zondo, N. P., & Makgoba, M. W. (2013). A new look at demographic transformation for universities in South Africa. *South African Journal of Science, 109*(11/12), 1-11.

Grady-Smith, C. J. (2012). *Overcoming a culture of whiteness: remaking Queen's University as a first nations thirdspace.* (Master's degree), Queen's University, Ontario, Canada.

Gregory, D., & Urry, J. (Eds.). (1985). *Social relations and spatial structures*. London: Macmillan.

Gultig, J. (2000). The university in post-apartheid South Africa: new ethos and new divisions. *South African Journal of Higher Education, 14*(1), 37-52.

Guthrie, K., & Housewright, R. (2011). Repackaging the library: what do faculty think? *Journal of Library Administration, 51*(1), 77-104.

Haglund, L., & Olsson, P. (2008). The impact on university libraries of changes in information behavior among academic researchers: a multiple case study. *The Journal of Academic Librarianship, 34*(1), 52-59.

Halbwachs, M. (1992). *On collective memory.* Chicago: University of Chicago Press.

Hampton-Reeves, S., Mashiter, C., Westaway, J., Lumsden, P., Day, H., Hewertson, H., & Hart, A. (2009). *Students' use of research content in teaching and learning: A report for the Joint Information Systems Council (JISC)*. Preston: Centre for Research Informed Teaching, University of Central Lancashire.

Hart, R. (1997). Information gathering among the faculty of a comprehensive college: formality and globality. *Journal of Academic Librarianship, 23*(1), 21-27.

Hartley, D. (1997). *Re-schooling society*. London: Falmer Press.

Hartley, P., Woods, A., & Pill, M. (Eds.). (2005). *Enhancing teaching in higher education: new approaches for improving student learning*. London: Routledge.

Henderson, T., & MacEwan, B. (1997). Electronic collections and wired faculty. *Library Trends, 45*(3), 488-499.

Henning, E., Van Rensburg, W., & Smit, B. (2004). *Finding your way in qualitative research*. Pretoria: Van Schaik.

Hennink, M., Hutter, N., & Bailey, A. (2011). *Qualitative research methods*. Los Angeles: Sage.

Hetherington, K. (1998). *Expressions of identity space, performance, politics*. London: Sage.

Hesse-Biber, S. N. (2010). *Mixed methods research: merging theory with practice*. New York: Guilford Press.

Higher Education Funding Council for England. (2002). *Researchers' use of libraries and other information sources: current patterns and future trends.* Brighton, UK: University of Brighton.

Houlihan, R. (2005). The academic library as congenial space: more on the St. Mary's experience. *New Library World, 106*(1208/1209), 7-15.

Hubbard, P., Kitchin, R., & Valentine, G. (Eds.). (2004). *Key thinkers on space and place*. London: Sage.

Jacobs, J. A., & Winslow, S. E. (2004). The academic life course, time pressures and gender inequality. *Community, Work & Family, 7*(2), 143-161.

Jacobs, J. A., & Winslow, S. E. (2004). Overworked faculty: job stresses and family demands. *The Annals of the American Academy of Political and Social Science, 596*(1), 104-129.

Jakle, J. A., Brunn, S., & Roseman, C. C. (1976). *Human spatial behaviour: a social geography*. North Scituate, MA: Duxbury Press.

Jamali, H. R., & Nicholas, D. (2006). *Communication and information-seeking behaviour of research students in physics and astronomy*. Paper presented at the ASIST Annual Conference, Austin, Texas.

Jankowska, M. A. (2004). Identifying university professors' information needs in the challenging environment of information and communication technologies. *Journal of Academic Librarianship, 30*(1), 51-66.

Jarvis, P. (2005). *Human learning: a holistic approach*. London: Routledge.

Jauhiainen, A., Jauhiainen, A., & Laiho, A. (2009). The dilemmas of the 'efficiency university' policy and the everyday life of university teachers. *Teaching in Higher Education, 14*(4), 417-428.

Jick, T. D. (2008). Mixing qualitative and quantitative methods: triangulation in action. In V. L. P. Clark & J. W. Creswell (Eds.), *The mixed methods reader*. Los Angeles: Sage

Jiyane, G. V., & Onyancha, O. B. (2010). Information literacy education and instruction in academic libraries and LIS schools in institutions of higher education in South Africa. *South African Journal of Librarianship and Information Science, 76*(1), 11-23.

Kachaluba, S. B., Brady, J. E., & Critten, J. (2014). Developing humanities collections in the digital age: exploring humanities faculty engagement with electronic and print resources. *College and Research Libraries, 75*(1), 91-108.

Karlsson, J. (2003). *Apartheid and post-apartheid discourses in school space: a study of Durban.* (Doctoral degree), University of London, London.   ( )

Kearsley, G., & Shneiderman, B. (1999). Engagement theory: a framework for technology-based learning, teaching and learning. Retrieved from http://home.sprynet.com/~gkearsley/engage.htm

Khoza, S.B. (2016a). Can curriculum managers' reflections produce new strategies through Moodle visions and resources? *South African Journal of Education*, 36(4), 1- 9.

Khoza, S.B. (2016b). Is Teaching without Understanding Curriculum Visions and Goals a High Risk? *South African Journal of Higher Education*, 30(5), 1-16.

Khoza, S.B. & Manik, S. (2015). The recognition of 'digital technology refugees' amongst postgraduate students in a higher education institution. *Alternation, (Special edn.),* 17, 190-208.

Kincheloe, J. L. (1991). *Teachers as researchers: qualitative inquiry as path to empowerment*. London: Routledge.

Klentzin, J. C., & Bucci, D. T. (2012). Part-time faculty and the academic library: a case study. *The Journal of Academic Librarianship, 38*(2), 101-107.

Korobili, S., Tilikidou, I., & Delistavrou, A. (2005). Factors that influence the use of library resources by faculty members. *Library Review, 55*(1/2), 91-105.

Krishnamurthi, M. (1998). Electronic mail: a useful communication tool for the college students. *Malaysian Journal of Library & Information Science, 3*(2), 99-110.

Kuruppu, D. C. (1999). Information needs and information seeking behaviour of users in organizations. *Information Studies, 5*(1), 53-66.

Kuruppu, P. U., & Gruber, A. M. (2006). Understanding the information needs of academic scholars in agricultural and biological sciences. *Journal of Academic Librarianship, 32*(6), 609-623.

Lancaster, F. W., & Sandore, B. (1997). *Technology and management in library and information services*. Champaign, IL: Graduate School of Library and Information Science, University of Illinois.

Latimer, K. (2011). Collections to connections: changing spaces and new challenges in academic library buildings. *Library Trends, 60*(1), 112-133.

Le Grange, L. (2008). Environmental justice: order-words and pass-words. *Southern African Journal of Environmental Education, 25*(1), 184-190.

Le Grange, L. (2011). Sustainability in higher education: from arborescent to rhizomatic thinking. *Educational Philosophy and Theory, 43*(7), 742-754.

Leathwood, C. & Read, B. (2013). Research policy and academic performativity: compliance, contestation and complicity. *Studies in Higher Education*, 38(8), 1162-1174

Leckie, G. J., & Hopkins, J. (2002). The public place of central libraries: findings from Toronto and Vancouver. *The Library Quarterly, 72*(3), 326-372.

Lederman, D., & Jaschik, S. (Eds.). (2013). *Survey of faculty attitudes on technology*. Washington, DC: Inside Higher Ed.

Lee, H.-L. (2008). Information structures and undergraduate students. *The Journal of Academic Librarianship, 34*(3), 211-219.

Lefebvre, H. (1991). *The production of space*. Cambridge, MA: Blackwell.

Levine, A. (1997). How the academic profession is changing. *Daedalus, 126*(4), 1-20.

Lewis, D. W. (2007). *A model for academic libraries 2005 to 2025*. Paper presented at the Visions of Change Conference, Sacramento, California.

Lewis, D. W. (2007) A strategy for academic libraries in the first quarter of the 21st century. *College and Research Libraries, 68(5), 418-434.*

Lichtman, M. (2006). *Qualitative research in education: a user's guide*. London: Sage

Liew, C. L., & Ng, S. N. (2006). Beyond the notes: a qualitative study of the information-seeking behavior of ethnomusicologists. *The Journal of Academic Librarianship, 32*(1), 60-68.

Light, D. J. (1974). The structure of the academic professions. *Sociology of Education, 47*(1), 2-28.

Lin, P., Chen, K., & Chang, S. (2010). Before there was a place called library: library space as an invisible factor affecting students' learning. *Libri: International Journal of Libraries & Information Services, 60*(4), 339-351.

Lodico, M. G., Spaulding, D. T. & Voegtle, K. H. (2006) *Methods in educational research: from theory to practice.* San Francisco: John Wiley & Sons.

Lodico, M. G., Spaulding, D. T. & Voegtle, K. H. (2010) *Methods in educational research: from theory to practice.* 2nd ed. San Francisco: John Wiley & Sons.

Lougee, W. P. (2002). *Diffuse libraries: emergent roles for the research library in the digital age*. Washington, DC: Council on Information and Library Resources.

Luce, R. E. (2008). A new value equation challenge: the emergence of e-research and roles for research libraries. In Council on Library and Information Resources (Ed.), *No brief candle: reconceiving research libraries for the 21st century.* (pp. 42-50). Washington, DC: Council on Library and Information Resources.

Ludwig, L., & Starr, S. (2005). Library as place: results of a delphi study. *Journal of the Medical Library Association, 93*(3), 315-326.

Lyman, P., & R, V. H. (2000). *How much information?* Berkley, CA: University of California Press.

Lynch, C. (2000). From automation to transformation: forty years of libraries and information technology in higher education. *EDUCAUSE Review, 35*(1), 60-69.

Lynch, K. (1960). *The image of the city.* Cambridge: MIT Press.

MacColl, J., & Jubb, M. (2011). *Supporting research: environments, administration and libraries*. Dublin, OH: OCLC Research.

Madras Library Association. (2005). *Digital libraries to knowledge systems.* Paper presented at the Recent advances in information technology READIT 2005, Madras, India.

Majid, A., & Kassim, G. M. (2000). Information-seeking behaviour of international Islamic university Malaysia law faculty members. *Malaysian Journal of Library & Information Science, 5*(2), 1-17.

Makgoba, M. W. (2004). The value and need for research in the African university. *Ingede: Journal of African Scholarship, 1*(2).

Manathunga, C. (2009). Supervision as a contested space: a response. *Teaching in Higher Education, 14*(3), 341-345.

Maree, K. (Ed.) (2016). *First steps in research.* 2nd ed. Pretoria: Van Schaik.

Marshall, C., & Rossman, G. B. (2011). *Designing qualitative research* (5th ed.). Los Angeles: Sage.

Martell, C. R. (2005). The ubiquitous user: a re-examination of Carlson's "Deserted Library". *Portal: Libraries and the Academy, 5*(4), 441-453.

Massey, D. (1984). *Spatial divisions of labour*. Basingstoke, UK: Macmillan.

Massey, D. (1994). *Space, place and gender*. Cambridge, UK: Polity.

Mbali, C. (2010). Against journal articles for measuring value in university output. *South African Journal of Higher Education, 24*(5), 745-757.

McCallin, A., & Nayar, S. (2012). Postgraduate research supervision: a critical review of current practice. *Teaching in Higher Education, 17*(1), 63-74.

Milgrom, R. (2008). Lucien Kroll: design, difference, everyday life. In K. Goonewardena & H. Lefebvre (Eds.), *Space, difference, everyday life: reading Henri Lefebvre* (pp. 264-282). New York: Routledge.

Miller, A. N., Taylor, S. G., & Bedeian, A. G. (2011). Publish or perish: academic life as management faculty live it. *Career Development International, 16*(5), 422-445.

Miller, F. (2008). Research information needs of public policy oriented researchers at a regional university: issues emerging from a pilot study. *Australian Academic & Research Libraries, 39*(4), 253-268.

Moles, K. (2008). A walk in thirdspace: place, methods and walking. *Sociological research online, 13*(4), 2.

Mouton, J. (2001). *How to succeed in your Master's and Doctoral studies: a South African guide and resource book*. Pretoria: Van Schaik.

Moyane, P. S. (2009). *Research capacity needs of academic staff in the humanities at the University of Zululand.* (Master's degree), University of KwaZulu-Natal, Pietermaritzburg.

Murray, R. (Ed.) (2008). *The scholarship of teaching and learning in higher education*. Maidenhead, UK: Society for Research into Higher Education & Open University Press.

Naude, P. (2012). Higher education needs attention. *Business Day Live*.

Neal, J. G. (2009). What do users want? What do users need? W(h)ither the academic research library? *Journal of Library Administration, 49*(5), 436-468.

Nealon, J., & Giroux, S. S. (2003). *The theory toolbox, critical concepts for the humanities, arts, and social sciences*. Lanham, MD: Rowman & Littlefield.

Niegaard, H. (2011). Library space and digital challenges. *Library Trends, 60*(1), 147-189.

Nkosi, D. R. (2009). *Knowledge and use of library resources by academic staff and their expectations of undergraduate students with respect to their use of the library at the University of KwaZulu-Natal, Pietermaritzburg campus.* (Master's degree), University of KwaZulu-Natal, Pietermaritzburg.

North, D., Zewotir, T., & Murray, M. (2011). Demographic and academic factors affecting research productivity at the University of KwaZulu-Natal. *South African Journal of Higher Education, 25*(7), 1416-1428.

NUA Internet Surveys. (1999). College professors stressed by IT. Retrieved from http://www.nua.ie/surveys/index.cgi?f=VS&art_id=905355241&re1=true

Oakleaf, M. (2010). *Value of academic libraries: a comprehensive research review*. Chicago: Association of College and Research Libraries.

Oppenheim, C., & Smithson, D. (1999). What is the hybrid library? *Journal of Information Science, 25*(2), 97-112.

Oppermann, B. V., & Jameson, M. (2008). New roles for an academic library: current measurements. *New Library World, 109*(11/12), 559-573.

Osborne, J. W., & Overbay, A. (2004). The power of outliers (and why researchers should always check for them). *Practical Assessment, Research & Evaluation, 9*(6), 1-12.

Ovadia, S. (2009). How does tenure status impact library usage: a study of La Guardia Community College. *Journal of Academic Librarianship, 35*(4), 332-340.

Pather, R. (2004). *A comparative study of the costs and benefits of journal ownership versus full-text electronic access in the Faculty of Science at the University of Natal, Durban, Libraries.* (Master's degree), University of KwaZulu-Natal, Durban.

Pomerantz, J., & Marchionini, G. (2007). The digital library as place. *Journal of Documentation, 63*(4), 505-533.

Prasad, B. S., & Swarnalatha. (2005). *Digital library infrastructure and architecture*. Paper presented at the Recent Advances in Information Technology READIT 2005, Madras, India.

Quigley, S. A. (2011). Academic identity: a modern perspective. *Educate, 11*(1), 20-30.
Ranseen, E. (2002). The library as place: changing perspectives. *Library Administration and Management, 16*(4), 203-207.

Raju, R. & Schoombee, L. (2013). Research support through the lens of transformation in academic libraries with reference to the case of Stellenbosch university libraries. *South African Journal of Libraries and Information Science,* 79(2), 27-38

Reddy, T. (2004). *Higher education and social transformation: South Africa case study*. Pretoria: Council on Higher Education.

Relph, E. (1976). *Place and placelessness*. London: Pion

Republic of South Africa Department of Education. (1997). *Education White Paper 3: a programme for Higher Education transformation*. Pretoria: Government Printer.

Republic of South Africa Ministry of Education. (2001). *National Plan for Higher Education in South Africa*. Pretoria: Government Printer.

Research Information Network. (2011). *The role of research supervisors in information literacy*. Cardiff: University of Cardiff.

Research Information Network, & Research Libraries UK. (2011). *The value of libraries for research and researchers*. London: Author.

Research Libraries Consortium. (2006). *A new model for research support: integrating skills, scholarship, and technology in a South African Library consortium: Proposal to the Carnegie Corporation of New York.* Cape Town: Universities of Cape Town, KwaZulu-Natal and Witwatersrand.

Research Support Libraries Group. (2003). *Research Support Libraries Group: final report*. Bristol: Higher Education Funding Council for England.

Roberts, R. L. (2007). The evolving landscape of the learning commons. *Library Review, 56*(9), 803-810.

Rowland, S. (2006). *The enquiring university: compliance and contestation in higher education*. Maidenhead, UK: Society for Research into Higher Education and Open University Press.

Rowlands, I., & Fieldhouse, M. (2007). *Trends in scholarly information behaviour*. London: British Library and Joint Information Systems Committee.

Rowlands, I., & Nicholas, D. (2008). Understanding information behaviour: how do students and faculty find books? *The Journal of Academic Librarianship, 34*(1), 3-15.

Rule, P., & Vaughn, J. (2011). *Your guide to case study research*. Pretoria: Van Schaik.

Rupp-Serrano, K., & Robbins, S. (2013). Information-seeking habits of education faculty. *College and Research Libraries, 322*(2), 131-141.

Rupp-Serrano, K., Robbins, S., & Cain, D. (2002). Canceling print serials in favour of electronic: criteria for decision making. *Library Collections, Acquisitions & Technical Services, 26*(4), 369-378.

Samuel, M., & Vithal, R. (2011). Emergent frameworks of research teaching and learning in a cohort-based doctoral programme. *Perspectives in Education, 29*(3), 76-87.

Savin-Baden, M. (2008). *Learning spaces: creating opportunities for knowledge creation in academic life.* Maidenhead, UK: Open University Press.

Sax, L. J., Hagerdorn, L. S., Arredondo, M., & Dicrisi, F. A. (2002). Faculty research productivity: exploring the role of gender and family-related factors. *Research in Higher Education, 43*(4), 423-446.

Schmid, C. (2008). Henri Lefebvre's theory of the production of space: towards a three-dimensional dialectic. In K. Goonewardena & H. Lefebvre (Eds.), *Space, difference, everyday life: reading Henri Lefebvre* (pp. 27-45). New York: Routledge.

Schoenberger, E. (2004) Spatial fix revisited. *Antipode, 427-433*

Schonfeld, R., & Housewright, R. (2008). *US faculty survey 2006: studies of key stakeholders in the digital transformation in higher education*. New York: ITHAKA S+R.

Schonfeld, R., & Housewright, R. (2010). *Faculty survey 2009: key strategic insights for libraries, publishers, and societies*. New York: ITHAKA S+R.

Schonfeld, R., Housewright, R., & Wulfson, K. (2013). *US faculty survey 2012*. New York: ITHAKA S+R.

Schonfeld, R., & Long, M. P. (2010). *Library survey 2010: insights from U.S. academic library directors*. New York: ITHAKA S+R.

Scott, P. (Ed.) (1998). *The globalization of higher education*. Berkshire, England: Society for Research into Higher Education and Open University Press.

Seaman, S. (2005). Another great dissolution? The privatisation of public universities and the academic library. *The Journal of Academic Librarianship,* 31(4), 305-309.

Sens, T. (2009). 12 major trends in library design. *Building Design & Construction.* Retrieved from: http;//www.bcdnetwork.com/12-major-trends-library-design.

Shill, H. B., & Tonner, S. (2003). Creating a better place: physical improvements in academic libraries, 1995-2002. *College and Research Libraries, 64*(6), 431-466.

Shill, H. B., & Tonner, S. (2004). Does the building still matter? Usage patterns in new, expanded and renovated libraries, 1995-2002. *College and Research Libraries, 65*(2), 123-150.

Silver, H. (2007). *Use of collaborative spaces in an academic library.* (Doctoral degree), Simmons College, Boston, MA.

Silverman, D. (Ed.) (1997). *Qualitative research: theory, method and practice*. London: Sage.

Smith, A., & Webster, F. (Eds.). (1997). *The postmodern university: contested visions of higher education in society*. Buckingham, UK: Society for Research into Higher Education and Open University Press.

Smith, E. T. (2003). Changes in faculty reading behaviours: the impact of electronic jounals on the University of Georgia. *Journal of Academic Librarianship, 29*(3), 162-168.

Soja, E. W. (1989). *Postmodern geographies: the reassertion of space in critical social theory.* London: Verso.

Soja, E. W. (1996). *Thirdspace: journeys to Los Angeles and other real-and-imagined places*. Cambridge, MA: Blackwell.

Soja, E. W. (1997). Reassertions: towards a spatial ontology. In: Agnew, J., Livingstone, D.N. & Rogers, A. (Eds.). *Human geography: an essential anthology*, (pp.623-635). Oxford: Blackwell Publisher.

Soja, E. W. (2001). *In different spaces: interpreting the spatial organization of societies.* Paper presented at the 3rd International Space Syntax Symposium, Atlanta, GA.

Soja, E. W. (2010). *Seeking spatial justice*. Minneapolis, MN: University of Minnesota Press.

Somekh, B., & Schwandt, T. A. (Eds.). (2007). *Knowledge production: research work in interesting times*. London: Routledge.

South Africa Ministry of Education. (2003). *Policy and procedures for the measurement of research output for public higher education institutions*. Pretoria: Government Printer.

Stewart, C. (2011). Building measurements: assessing success of the library's changing physical space. *Journal of Academic Librarianship, 37*(6), 539-541.

Steyn, A. G. W. (2002). State funding of universities and technikons 1993 to 2001. *South African Journal of Education, 20*(2), 253-269.

Strydom, J. F., Basson, N., & Mentz, M. (2012). *Enhancing the quality of teaching and learning: using student engagement data to establish a culture of evidence*. Pretoria: Council on Higher Education.

Sturrock, J. (Ed.) (1968). *Le materialisme dialectique*. New York: Grossman.
Sue, V. M., & Ritter, L. A. (2012). *Conducting online surveys*. Los Angeles: Sage.

Sullivan, B. T. (2011). Academic library autopsy report 2050. *The Chronicle of higher education*. Retrieved from http://chronicle.com/article/Academic-Library-Autopsy/125767

Tahira, M. (2012). (PAPER WITHDRAWN) Seeking online information sources: science faculties in developing countries. *Library Philosophy and Practice*. Retrieved from http://digitalcommons.unl.edu/libphilprac/661/

Temple, P. (2008). Learning spaces in higher education: an under researched topic. *London Review of Education, 6*(3), 229-241.

Tenopir, C. (2003). *Use and users of electronic library resources: an overview and analysis of recent research studies*. Washington, DC: Council for Library Information Resources.

Tenopir, C., & King, D. W. (2002). Designing electronic journals with 30 years of lessons from print. *Journal of Electronic publishing, 4*(2).

Tenopir, C., King, D. W., Boyce, P., Grayson, M., Zhang, Y., & Ebuen, M. (2003). Patterns of journal use by scientists through three evolutionary phases. *D-Lib Magazine, 9*(5).

Tenopir, C., King, D. W., Montgomery, C. H., & Aerni, S. E. (2003). Patterns of journal use by faculty at three diverse universities *D-Lib Magazine, 9*(5).

Terre-Blanche, M., Durrheim, K. & Painter, D. (2006). *Research in practice: applied methods for the social sciences.* Johannesburg: Juta.

Thomas, M. A. (2000). Redefining library space: managing the coexistence of books, computers, and readers. *Journal of Academic Librarianship, 26*(6), 408-415.

Tight, M. (2003). *Researching higher education*. Maidenhead, UK: Society for Research into Higher Education and Open University Press.

Tongai, I. (2013, 13 July). Incentives for researchers drive up publication output. *University World News*. Retrieved from
http://www.universityworldnews.com/article.php?story=20130712145949477

Tourish, D. (2011). Leading questions: journal rankings, academic freedom and performativity: what is, or should be, the future of Leadership? *Leadership, 7*(3), 367-381.

Troll, D. A. (2001). How and why are libraries changing? *Digital Library*, 1-13. Retrieved from
http://www.diglib.org/use/whitepaper.htm

Tuan, Y.-F. (1975). Place: an experiential perspective. *Geographical Review, 65*(2), 151-165.

Tuan, Y.-F. (2001). *Space and place: the perspective of experience*. Minneapolis, MN: University of Minnesota.

University of KwaZulu-Natal. (2016). About UKZN Homepage.   Retrieved from
http://www.ukzn.ac.za/about-ukzn/

University of KwaZulu-Natal Division of Human Resources & Equity. (2008). *Academic promotions policy*. University of KwaZulu-Natal. Durban.

University of KwaZulu-Natal Division of Human Resources & Equity. (2008). *Retirement policy and procedures*. University of KwaZulu-Natal. Durban.

University of KwaZulu-Natal Division of Human Resources & Equity. (2013). *Academic staff promotions pprocedure and guidelines.* University of KwaZulu-Natal. Durban.

University of KwaZulu-Natal Division of Management Information. (2012). *Staffing patterns in the School of Education*. University of KwaZulu-Natal. Durban.

University of KwaZulu-Natal Library (UKZN Library). (2009). *Annual Statistics 2009*. Durban: University of KwaZulu-Natal.

University of KwaZulu-Natal Library (UKZN Library). (2010). *Annual Circulation Statistics 2010*. Durban: Library, University of KwaZulu-Natal.

University of KwaZulu-Natal Library (UKZN Library). (2010). *Annual Report of 2013*. Durban: University of KwaZulu-Natal.

University of KwaZulu-Natal Library (UKZN Library). (2010). *Annual Report of 2014*. Durban: University of KwaZulu-Natal.

University of KwaZulu-Natal Library (UKZN Library). (2010). *Annual Review of 2010.* Durban: University of KwaZulu-Natal.

University of KwaZulu-Natal Library (UKZN Library). (2010). *Annual Statistics 2010*. Durban: University of KwaZulu-Natal.

University of KwaZulu-Natal Library (UKZN Library) (2011). *Annual Circulation Statistics 2011*. Durban: University of KwaZulu-Natal Library.

University of KwaZulu-Natal Library (UKZN Library). (2011). *Annual Review of 2011*. Durban: University of KwaZulu-Natal.

University of KwaZulu-Natal Library (UKZN Library). (2011). *Annual Statistics 2011*. Durban: University of Kwa-Zulu Natal.

University of KwaZulu-Natal Library (UKZN Library). (2012). *Annual Circulation Statistics 2012*. Durban: University of KwaZulu-Natal Library.

University of KwaZulu-Natal Library (UKZN Library). (2012). *Annual Review of 2012*. Durban: University of KwaZulu-Natal.

University of KwaZulu-Natal Library (UKZN Library). (2012). *Annual Statistics 2012*. Durban: University of Kwa-Zulu Natal.

University of KwaZulu-Natal Library (UKZN Library). (2012). *Library Book Fund Allocation 2012*. Durban: University of KwaZulu-Natal Library.

University of KwaZulu-Natal Library (UKZN Library). (2013). *Annual Circulation Statistics 2013*. Durban: University of KwaZulu-Natal Library,

University of KwaZulu-Natal Library (UKZN Library). (2014). *Annual Circulation Statistics 2014*. Durban: University of KwaZulu-Natal Library,

University of KwaZulu-Natal Research Office (UKZN Research Office). (2007). *Annual Research Report 2007*. Durban: University of KwaZulu-Natal.

University of KwaZulu-Natal Research Office (UKZN Research Office). (2007). *Research Policy II: Developing, retaining and rewarding researchers*. Durban: University of KwaZulu-Natal.

University of KwaZulu-Natal Research Office (UKZN Research Office). (2007). *Research Policy III: Collaborative research and strategic research initiatives*. Durban: University of KwaZulu-Natal.

University of KwaZulu-Natal Research Office (UKZN Research Office). (2008). *Annual Research Report 2008*. Durban: University of KwaZulu-Natal.

University of KwaZulu-Natal Research Office (UKZN Research Office). (2009). *Annual Research Report 2009*. Durban: University of KwaZulu-Natal.

University of KwaZulu-Natal Research Office (UKZN Research Office). (2010). *Annual Research Report 2010* (U. o. K.-N. Research Office, Trans.). Durban: University of KwaZulu-Natal.

University of KwaZulu-Natal Research Office (UKZN Research Office). (2011). *Annual Research Report 2011*. Durban: University of KwaZulu-Natal.

University of KwaZulu-Natal Research Office (UKZN Research Office). (2012). *Annual Research Report 2012*. Durban: University of KwaZulu-Natal.

University of KwaZulu-Natal School of Education. (2012). *(DATE) Minutes of the meeting of the Board of the School of Education*. University of KwaZulu-Natal. Durban.

University of KwaZulu-Natal School of Education. (2013). School of Education Homepage.   Retrieved from http://soe.ukzn.ac.za/

University of KwaZulu-Natal Senate. (2010). *Analysis of research productivity at UKZN for the period 2004-2008.* Durban: University of KwaZulu-Natal.

Unterhalter, E., & Carpentier, V. (2010). *Global inequalities and higher education: whose interests are we serving?* Basingstoke, UK: Palgrave Macmillan.

Van Orsdel, L.C. & Born, K. (2006). Periodicals Price Survey 2006: Journals in the time of Google. *Library Journal,* (15 April), 39-44.

Vessuri, H., & Teichler, U. (Eds.). (2008). *Universities as centres of research and knowledge creation: an endangered species?* Rotterdam: Sense.

Vithal, R. (2011). *University of KwaZulu-Natal framework for teaching workloads*. Durban: University of KwaZulu-Natal Teaching and Learning Office.

Walton, G. (2006). Learners' demands and expectations for space in a university library: outcomes from a survey at Loughborough University. *New Library World, 12*(2), 133-149.

Washington-Hoagland, C., & Clougherty, L. (2002). Faculty and staff use of academic library resources and services: a University of Iowa Libraries' perspective. *Portal: Libraries and the Academy, 2*(4), 627-646.

Wassermann, J. & Bryan, A. (2010). *From College to Faculty of Education: remains of the Edgewood campus of the University of KwaZulu-Natal.* Durban: University of KwaZulu-Nata*l.*

Webb, K. M., Schaller, M. A., & Hunley, S. A. (2008). Measuring library space use and preferences: charting a path towards increased engagement. *Portal: Libraries and the Academy, 8*(4), 407-422.

Weingart, S. J., & Anderson, J. A. (2000). When questions are answers: using a survey to achieve faculty awareness of the library's electronic resources. *College and Research Libraries, 61*(2), 127-134.

Weise, F. (2004) Being there: the library as place. *Journal of Medical Library Association,* 92(1), 6-13.

Wilkins, J. L. H., & J, L. G. (1997). University professional and managerial staff: information needs and seeking. *College and Research Libraries, 58*(6), 561-574.

Wineski, R. (2005). Investigating the research practices and library needs of contingent. tenure-track, and tenured english faculty. *Journal of Academic Librarianship, 31*(2), 119-133.

Zha, X., Li, J., & Yan, Y. (2012). Understanding usage transfer from print resources to electronic resources: a survey of users of Chinese university libraries. *Serials review, 38*(2012), 92-98.

Zhang, Z., Spicer, A., & Hancock, P. (2008). Hyper-organisational space in the work of J. G. Ballard. *Organization, 15*(6), 889-910.

List of Appendices

Library spaces in higher education

Dear Colleagues,

I, Roshini Pather am currently studying towards a PhD degree in the School of Education at the University of KwaZulu-Natal. I am conducting a study on "Library spaces in Higher Education: exploring academic researchers' conceptions.

You are invited to participate in this study. The purpose of the study is to gain an increased understanding of the conceptions of academic staff members towards the library space, how they understand the space (physical and virtual), what spaces they are using and the nature and effectiveness of this usage.

Your participation in this study is voluntary. All information gathered in the course of the study will be treated as confidential and you may refuse to participate or withdraw from the survey at any time. Confidentiality and anonymity in all reports emanating from this study is assured. Data collected will be kept in secure storage for a period of five years and then destroyed.

It should take about 10 minutes to complete the questionnaire. It comprises of 36 questions. I would be grateful if you would complete the questionnaire.

Thanking you in anticipation. Roshini Pather

Contact details:
Tel: 031-2603025 Email : patherr@ukzn.ac.za
Supervisor : Prof Reshma Sookrajh Tel: 031-2607259 Email : sookrajhre@ukzn.ac.za

There are 36 questions in this survey

Demographics

1*

Please choose only one of the following:

- O Female
- O Male

2*

Please choose only one of the following:

- O Below 25
- O 26-29
- O 30-39
- O 40-49
- O 50-59
- O 60 and over

3* Which of the following best describes your current position?

Please choose only one of the following:

- O Professor
- O Associate Professor
- O Senior Lecturer
- O Lecturer
- O Junior Lecturer
- O Contract Lecturer
- O Tutor
- O Other

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[                              ]
```

4* Please indicate the **approximate** division of your time spent between the following tasks?
Please enter approximate percentage (%) for each activity.

Please choose only one of the following:

Research

[   ]

Teaching

[   ]

Administration

5* What is your area of research?

Please choose only one of the following:

- O Education Studies
- O Mathematics, Science and Technology
- O Language, Literature
- O Drama
- O Curriculum
- O Education and Development Education and Leadership
- O Other

[   ]

Research behavior

6* Where do you work in respect of the following?

Please choose the appropriate response for each item:

Only answer this question for the items you selected in question 0 (")

	Library	Office	Home
Research	○	○	○
Printing and Photocopying	○	○	○
Interlibrary Loan	○	○	○
Consultation	○	○	○
Reading and Writing	○	○	○
Preparing teaching material	○	○	○
Administration	○	○	○
Other	○	○	○

7* What is your most used (that is, primary) and next most used (that is, secondary) spaces for sources of research information?

Please choose the appropriate response for each item:

	Most used (Primary)	Next most used (Secondary)	Do not use
At home	○	○	○
In my office	○	○	○
Elsewhere in the School	○	○	○
In the Edgewood Library	○	○	○
In other UKZN campus Libraries	○	○	○
In the local public or other library	○	○	○

8* Which of the following types of Information sources do you currently use in your Research?

Please choose the appropriate response for each item:

	Extensively use	Moderately use	Do not use
Artefacts	O	O	O
Bibliographic tools, indexes and abstracting service	O	O	O
Books and current publications	O	O	O
Electronic full text services	O	O	O
Electronic journals	O	O	O
Electronic publications, for example E-books	O	O	O
Electronic pre-print archives of articles or research papers	O	O	O
Electronic bulletin boards	O	O	O
Electronic alerting services	O	O	O
Maps and charts	O	O	O
Newspapers	O	O	O
Photographs and images	O	O	O
Printed journals - academic (i.e. articles have to be refereed or peer-reviewed)	O	O	O
Printed journals - other (i.e. not refereed or peer-reviewed)	O	O	O
Rare books and manuscripts	O	O	O
Search engines like Google, Google Scholar	O	O	O

9* Information sources for research can be obtained from many providers, either in person or electronically. Which of the following providers do you currently use?

Please choose the appropriate response for each item:

	Extensively use	Moderately use	Do not use
Own private collection Library	O	O	O
Colleagues Departmental resources	O	O	O
Conferences / Researchers networks	O	O	O
(Any) other university library	O	O	O
Research institutes, like the HSRC	O	O	O
Department of Education	O	O	O

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10* Do you use any of the following?

Please choose the appropriate response for each item:

	Yes	Uncertain	No
Blogs	O	O	O
Moodle (Learning@ukzn.ac.za)	O	O	O
Podcasting	O	O	O
Social networking sites, e.g. Facebook	O	O	O
Twitter	O	O	O
Wikis	O	O	O
Other	O	O	O

11* How often do you publish? Please indicate the number per year of the following publication types?

Please choose all that apply and provide a comment:

☐ Accredited / Approved journals

☐ Non-accredited / Non-approved journals

☐ Books (written or edited)

☐ Chapters in books

☐ Reports

12* Are your publications typically sole or joint?

Please choose all that apply:

☐   Sole

☐   Joint

13* In your opinion, does the Library enable your research output?

Please write your answer here:

14*Does it influence or impact on your research engagement?

Please write your answer here:

Approach

15* Do you research primarily alone or as part of a team?

Please choose **all** that apply:

- ☐ Primarily alone
- ☐ Part of a team

16* If you conduct your research as a team, how often do team members interact (typically)? Do you research primarily alone or as part of a team?

Please choose **only one** of the following:

- ○ Daily
- ○ Every 2 or 3 days
- ○ Weekly
- ○ Fortnightly
- ○ Monthly
- ○ Less often

17* Do you supervise research conducted by others?

Please choose **only one** of the following:

- ○ Yes
- ○ No

18* If YES,

Please choose **all** that apply:

- ☐ Supervision of Honours students
- ☐ Supervision of Masters students
- ☐ Supervision 0f Doctoral students
- ☐ Supervision of other researchers
- ☐ Other

Library as Physical space

19* How frequently do you visit the Edgewood Library?

Please choose the appropriate response for each item:

	Daily	Weekly	Fortnightly	Monthly	Less than once each month	Never
Frequency of visits this year	O	O	O	O	O	O
Frequency of visits in 2011	O	O	O	O	O	O
Frequency of visits in the last three years	O	O	O	O	O	O

20* How frequently do you visit the other UKZN Campus Libraries?

Please choose the appropriate response for each item:

	Daily	Weekly	Fortnightly	Monthly	Less than once each month	Never
Frequency of visits this year	O	O	O	O	O	O
Frequency of visits in 2011	O	O	O	O	O	O
Frequency of visits in the last three years	O	O	O	O	O	O

21* How do you find information in print?

Please indicate the extent to which the print-based resources normally provided by the Library are useful to you as a researcher.

Please choose the appropriate response for each item:

	Very useful	Useful	Neutral	Not useful
Archives in print	O	O	O	O
Back issues of journals in print	O	O	O	O
Books in print	O	O	O	O
Citation databases in print, e.g. ERIC	O	O	O	O
General bibliographic and abstracting and indexing databases in print	O	O	O	O
Subject-specific bibliographic and abstracting and indexing databases in print	O	O	O	O
Library catalogues in print	O	O	O	O
Non-peer reviewed materials in print, e.g. trade/professional publications, newspapers	O	O	O	O
Reference only collections in print	O	O	O	O
Short/restricted loan collections in print				
Special collections in print, e.g. EPU publications	O	O	O	O

Library as Virtual space

22* From where do you access electronic information (e.g. electronic journals, databases)?

Please choose the appropriate response for each item:

	Most used (Primary)	Next most used (Secondary)	Do not use
From home	O	O	O
From my office	O	O	O
Elsewhere in the School	O	O	O
In the Edgewood Library	O	O	O
In other UKZN campus Libraries	O	O	O
In the local public or other library	O	O	O
Other	O	O	O

23* Approximately what percentage of the sources you currently use is print or online?

For example, 35% print and 65% online

Please write your answer(s) here:

Print / Physical

[   ]

Electronic / Online

[   ]

24*How do you find information electronically?

Please indicate the extent to which the electronic resources normally provided by the Library are useful to you as a researcher.

Please choose the appropriate response for each item:

	Very useful	Useful	Neutral	Not useful
Back issues of electronic journals	O	O	O	O
Citation databases, e.g. Web of Science	O	O	O	O
Current issues of electronic journals	O	O	O	O
General bibliographic and abstracting and indexing databases, e.g. ERIC	O	O	O	O
Subject-specific bibliographic and abstracting and indexing databases e.g. ScienceDirect	O	O	O	O
Electronic books	O	O	O	O
Library catalogues	O	O	O	O
Electronic reference works	O	O	O	O
Institutional Repository (ResearchSpace) for disseminating your work	O	O	O	O
Online access to the electronic resources of other libraries	O	O	O	O
Institutional repositories for e-journal publishing	O	O	O	O
Library website	O	O	O	O
Library portal (Primo) to access many different resources	O	O	O	O
Subject specific portals	O	O	O	O

25* How important is each of the following search methods to you when finding electronic sources?

Please choose the appropriate response for each item:

	Very Important	Important	Neutral	Not important
Search engines	O	O	O	O
Google or Google Scholar	O	O	O	O
Subject gateways/portals (e.g. Resource Discovery Network)	O	O	O	O
Institutional or departmental gateways/portals (maintained by e.g. library or department)	O	O	O	O
Personal portals (maintained by individual researchers e.g. Data Archive)	O	O	O	O
Pre-print archives	O	O	O	O
Bibliographic databases, abstracting and indexing services, e.g. Sabinet	O	O	O	O
Library online catalogues	O	O	O	O
Subject mailing lists or listservs	O	O	O	O
Alerting facilities and discussion groups	O	O	O	O

26* In your opinion, which is more effective - print or online and why?

Please write your answer here:

Services and Resources

27* Are you aware of the following services and resources in the Library?

Please choose the appropriate response for each item:

	Yes	Uncertain	No
Academic Reserves (Short-loan) - prescribed and recommended publications	○	○	○
Interlibrary Loans	○	○	○
Subject Librarians	○	○	○
Photocopying / Printing	○	○	○
Ordering books and journals	○	○	○
Institutional Repository	○	○	○
Training students and staff to use the library and resources	○	○	○
Research Commons	○	○	○

28* Do you use the following services and resources in the Library?

Please choose the appropriate response for each item:

	Yes	Uncertain	No
Academic Reserves (Short-loan) - prescribed and recommended publications	○	○	○
Interlibrary Loans	○	○	○
Subject Librarians	○	○	○
Photocopying / Printing	○	○	○
Ordering books and journals	○	○	○
Institutional Repository	○	○	○
Training students and staff to use the library and resources	○	○	○

29* How important are the following physical resources provided by the Library for successful research engagement?

Please choose the appropriate response for each item:

	Very important	Important	Neutral	Not important	Not available in my Library
A place for quiet, individual study	O	O	O	O	O
A place for group study and learning	O	O	O	O	O
A place to browse current issues of printed publications	O	O	O	O	O
Provision of modern IT equipment to access electronic resources	O	O	O	O	O
A congenial meeting / networking space	O	O	O	O	O
Convenient opening hours	O	O	O	O	O
Up-to-date and relevant book collection	O	O	O	O	O
Up-to-date and relevant journal collection	O	O	O	O	O

30* How important are the following services provided by the Library for your research?

Please choose the appropriate response for each item:

	Very important	Important	Neutral	Not important	Not available in my Library
Teaching information literacy to researchers, i.e. how to find resources	O	O	O	O	O
Provision of subject-based information finding expertise	O	O	O	O	O
Support for the dissemination of research output	O	O	O	O	O
IT support for information related resources provided by your Library	O	O	O	O	O
Building collections of print and electronic resources	O	O	O	O	O

31* To what extent do you agree or disagree with the following statements?

Please choose the appropriate response for each item:

	Agree	Disagree	Do not know
I feel my Library is too focused on providing resources and services for Teaching	○	○	○
I feel my Library is too focused on providing resources and services for Research	○	○	○
I feel my Library has the balance between providing resources for Teaching and Research	○	○	○

32* How would you find something that is not available in the Library?

Please choose the appropriate response for each item:

	Yes	Uncertain	No
Interlibrary loans	○	○	○
Access fill-text	○	○	○
Access freely available full-text	○	○	○
Purchase article	○	○	○
Google	○	○	○
Open access	○	○	○
Contact the author or publisher or vendor	○	○	○
Contact the subject librarian or librarian	○	○	○
Contact a colleague	○	○	○
other	○	○	○

33* Is there anything you would like to change in the Library?

Please write your answer here:

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Library Space Vision

34* How do you envisage your use of these changes over the next 3 years?

Please choose the appropriate response for each item:

	Used more	Used less	No change	Do not know
Own private collection	O	O	O	O
Library	O	O	O	O
Colleagues	O	O	O	O
Departmental resources	O	O	O	O
Conferences / Researcher networks	O	O	O	O
Museum or Archive collection	O	O	O	O
(Any) other university library	O	O	O	O
Research institutes, for e.g. HSRC	O	O	O	O
Department of Education	O	O	O	O

35* In your opinion how has your use of the Library changed over time?

Please write your answer here:

36* Are you willing to participate in further research on this study?

- ○ Yes, taking part in a telephone interview
- ○ Yes, taking part in a face to face interview
- ○ No

Interview Protocol

Phase 2: Purposive sample of academic staff

Library spaces in Higher Education: exploring academic researchers' conceptions

Time of interview:	Date :
Place: Edgewood	Interviewer: Roshini Pather
Interviewee:	Position:
School: Education	

Thank you for taking the time to interview with me. The interview should take about 25 to 30 minutes to complete. The purpose of the study is to gain an increased understanding of the conceptions of library space by academics: how they understand the space (physical and virtual): what spaces they are using and the nature and effectiveness or non-effectiveness of this usage. This is done through an analysis of first level data collected through questionnaires which is reflected graphically. This interview is exploratory.

Your participation is voluntary. All information gathered in the course of the study will be treated as confidential and you may refuse to participate or withdraw from the interview at any time. Confidentiality and anonymity in all reports emanating from this study is assured. Data collected will be kept in secure storage for a period of five years and then destroyed.

In the first phase, I conducted an online survey of all academic staff in the School of Education, Edgewood Campus, UKZN. For the interview I would appreciate your comments on the survey data. There's five categories and I have presented the findings graphically and with tables, and would like your comments as an academic staff and responses to the survey by your fellow academics.   The semi-structured questions will be used to facilitate the discussion.

The categories are: Research Behaviour, Library as physical space, Library as virtual space, Relationship between the physical and virtual space and Library space of the future.

1. Research Behaviour

	Library	Office	Home
Research	6.8	**63.6**	29.5
Printing and Photocopying		97.8	2.2
Interlibrary Loan	75.6	20.0	4.4
Consultation	2.2	**97.8**	
Reading and Writing		57.8	42.2
Preparing teaching material		**75.6**	24.4
Administration		**100.0**	
Other	2.4	51.2	46.3

1.1   Office :
From the data found in the survey, academic staff indicated that the office is primarily used for administration (100%), consultation (97.8%), preparing teaching material (75.6%) and research (63.6%).
Could you comment on that?

1.2   Home :
The survey also suggests that minimal tasks are performed at home. What is the impact of that? Why do you think this is the case? And is this the case for you?

1.3   Library
What is your take on academic staff coming physically into the Library to get books, that they are not getting in their offices?

1.4   Supervision :
The data from the survey shows that 71.1% of academic staff supervise Masters students, 66.7% Honours and and 53.3 % Doctoral students.
Can you comment on that data? What are your perceptions of these figures, why do they appear as they do?

1.5   What is your comment on how they conduct supervision of their students without engaging with the Library? Where is it done? And is supervision related to the library?

Graph 2 : represents Question 1.4, 1.5
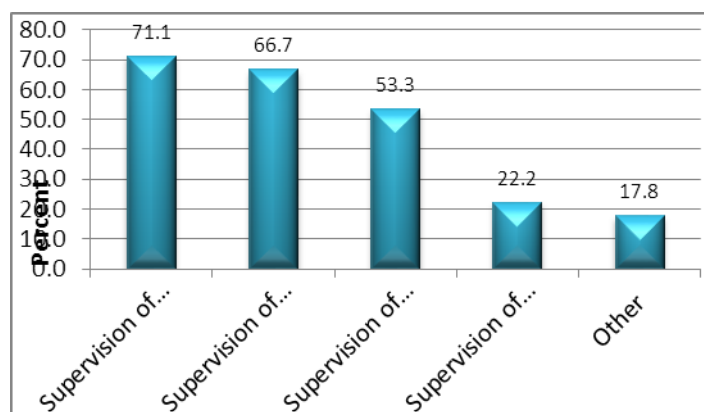
2. Library as a physical space

	Library	Office	Home
Research	6.8	63.6	29.5
Printing and Photocopying		97.8	2.2
Interlibrary Loan	75.6	20.0	4.4
Consultation	2.2	97.8	
Reading and Writing		57.8	42.2
Preparing teaching material		75.6	24.4
Administration		100.0	
Other	2.4	51.2	46.3

2.1   Library:
That when academic staff visit the physical library, it is used by 75.6% of academic for interlibrary loan. Why is this the case?

[Not many are aware that you can do this electronically from the office as well. Only 75.6% indulge in ILL, why do you think they are coming into the physical library to do that?]

2.2   That only 6.8% of them use the physical space for research. Why is this the case?

2.3   The data suggests that academic staff are visiting the Library at least once a month   (37.8%) , to use the print books (86.7%), current and back issues of journals (42.2%).
  Why is that?

Table 1 **: represents Question 2.3**

	This year	2011	Past 3 years
Daily	2.2	2.3	7.0
Weekly	8.9	7.0	9.3
Fortnightly	13.3	27.9	16.3
Monthly	33.3	23.3	34.9
Less than once each month	37.8	34.9	30.2
Never	4.4	4.7	2.3

2.4   The Research Commons is a feature of the physical library space and was targeted for postgraduates students largely. But some academic staff are using it for supervision of their students. Why is this?

2.5   How do you conceive the Library as a teaching space?

3. Library as a virtual space

3.1   I want to probe your Search /Discovery methods : When asked what is the space for sources of their research information, 75.6% indicated the Office, 62.2% indicate the Library. Why is it they do what they do?

	Most used	Next most used	Do not use
At home	18.6	69.8	11.6
In my office	**75.6**	24.4	
Elsewhere in the School	2.3	30.2	67.4
In the Edgewood Library	26.7	**62.2**	11.1
In other UKZN campus Libraries	9.3	46.5	44.2
In the local public or other library	6.8	13.6	79.5

3.2   Does the Library enable your research? How?

3.3   Academic staff seem to favour modern technology, more than 90% indicated they use electronic journals and the Internet. What is your opinion on this?

3.4   The survey shows 86.7% use Google to find resources, 97.8 % e-journals and 93.3 % electronic full-text.
Why is this so?. What would you attribute this to?

3.5   Electronic resources (86.7% use Google, Google Scholar; 97.8 % e-journals and 93.3 % electronic full-text) are used more frequently.
Are you schooled in technology, web technology?

3.6   How do you think these academics get to know what they know about these spaces?

3.7   How do you think this impacts on academics conceptions/perceptions of the library?

3.8   And if academic staff cannot find information from these sources, where do you think they go? What is the first go-to point when they cannot find information?

3.9   For sophisticated or advanced searches – how do you handle that?

4.   Relationship between the physical and virtual

   a.   That when staff use the Library, the only reason they get there is when they have difficulty in accessing the resources. The survey data seems to suggest that academic staff are not coming into the Library for anything other than interlibrary loans. Why do you think this is so?

b.   Academic staff are not seeing the link between the library and facilitated access to electronic resources, do you think there is a link?

c.   But when they encounter problems in access, they recognize that it is provided by the Library, why do you think this is the case?

5.   Library space of the future

5.1   From the survey it was found that more and more academic staff (75.6 %) are using the electronic resources from their offices and come in very occasionally to get something in print. And that nothing has changed in the Library in the last few years. What is your opinion on this use of space?

5.2   Do you think the library space will become more sophisticated or moribund/extinct/dormant – given that print is declining globally and usage is predominantly from the office? What is your take on this?

Conclusion

Thank you for your cooperation and participation in this interview. And I assure you of the confidentiality of your responses.

Graph 4 : represents Question 3.3
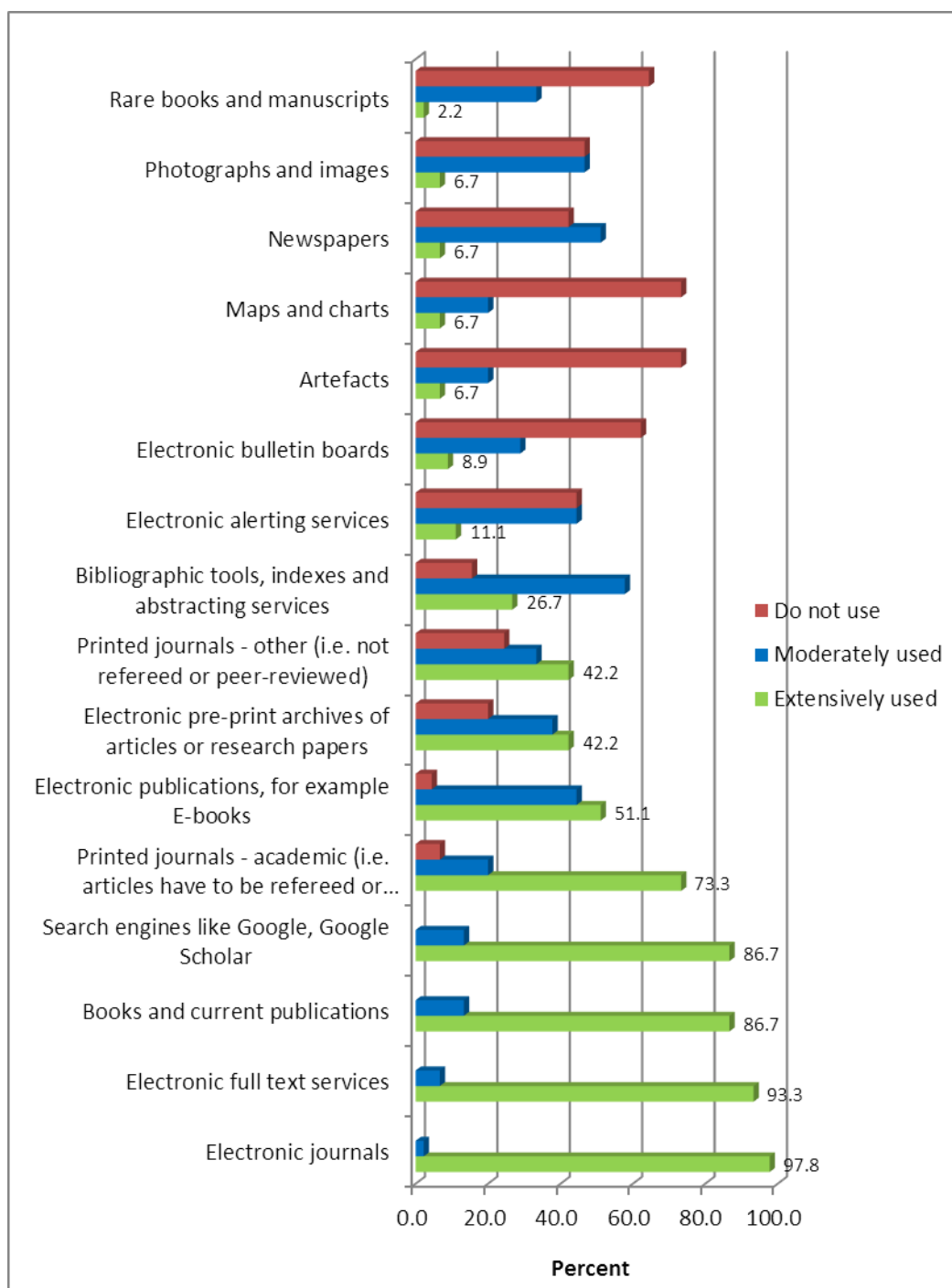
Roshini Pather

Tel: 031 2603025 /2603408

Cell: 0824563947

Email : patherr@ukzn.ac.za

Date : 30 August 2012

Dear Sir/Madam,

<u>REQUEST FOR CONSENT TO USE INFORMATION</u>

I am currently studying towards a PhD degree in the School of Education at the University of KwaZulu-Natal. The title of my study is: **Library spaces in higher education : exploring academic researchers' conceptions.** My proposal to undertake this study has been approved by the relevant committees of the University of KwaZulu-Natal. This study will contribute towards increased understanding of the conceptions of academic staff members towards the library space, how they understand the space, what spaces they are using and the nature and effectiveness of this usage.

You have been selected to be part of the pilot study. The purpose of the pilot study is to improve the validity of the instruments. I am thus seeking your consent to use your responses to the attached questionnaire.

In a dissertation or published article, it is common practice to acknowledge by name those whose ideas have informed the study and/or quote short comments which lend credence to a particular idea. This identification ensures that due recognition is given to you. If, however, you do not wish your name or any identifying details to appear in the dissertation and other ensuing publications, please indicate this in the Consent form overleaf.

Please will you complete the attached questionnaire and return to me or Dr Lokesh Maharajh as soon as possible. Please do not hesitate to contact me should you have any questions or concerns in relation to the study or the consent which is being sought from you. Alternatively, my supervisor, Prof Reshma Sookrajh, (sookrajhre@ukzn.ac.za) may be contacted. Your co-operation is greatly appreciated.

Yours sincerely

_____

Roshini Pather

PARTICIPANT REPLY FORM

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Declaration by Participant in the Study

Library spaces in higher education : exploring academic researchers' conceptions.

I……………………………………………………………………………… (full names of participant) hereby confirm that I understand the contents of document and the nature of the research project, and I consent to participating in the research project as described in the accompanying letter.

I understand that I am at liberty to withdraw my consent at any time and that such a withdrawal will not disadvantage me.

I understand that all information gathered in the course of my participation will be treated as confidential and my identity will not be disclosed. I will remain anonymous.

I understand that no payments or reimbursements of financial expenses shall be paid to me or expected from me.

Signature of participant   Date

……………………………………………………………   …………………..

Roshini Pather

Tel: 031 2603025 (W)

Cell: 0824563947

10th May 2012

TO:

Lecturer, School of Education

Dear Sir/Madam,

Participation in study on library spaces in higher education

 I am a campus librarian at a tertiary institution in KwaZulu-Natal. I am currently studying towards a PhD degree in the School of Education at a tertiary institution in KwaZulu-Natal. The title of my study is: **Library spaces in higher education : exploring academic researchers' conceptions**

I humbly request your participation in this study which will involve being interviewed on your conceptualization of library spaces. Your participation would make a valuable contribution towards this study. This study will contribute towards increased understanding of the conceptions of academic staff members towards the library space, how they understand the space, what spaces they are using and the nature and effectiveness of this usage.

In phase 1, I plan to interview all 124 full-time academic staff in the School of Education, and in phase 2, I plan to interview a purposive sample from phase 1. This will be conducted during the course of the second semester of 2012. Each interview will last approximately 30 minutes and will be conducted at a time and place that is convenient to you. All information gathered in the course of this study will be treated as confidential and you are at liberty to withdraw from the process at any time. I also assure you of anonymity in all reports emanating from this study. The material obtained will be kept in secure storage for a period of 5 years and then destroyed.

My supervisor is Professor Reshma Sookrajh who may be contacted by telephone on 031 2607259 or by email: sookrajhre@ukzn.ac.za. Permission will also be sought from the Head of the School of Education, should you be willing to participate in this study.

I look forward to receiving a favourable response for you soon.

Yours truly,

_____

Roshini Pather

Tel: 031 2603025 (W)

Cell: 0824563947

26[th] April 2012

TO:

The Acting Head: School of Education

Dear Sir

PERMISSION TO CONDUCT RESEARCH IN THE SCHOOL OF EDUCATION

I would like to ask for permission to conduct research in the School of Education. I am the Campus Librarian at a tertiary institution in KwaZulu-Natal.

 I am currently studying towards a PhD degree in the School of Education at a tertiary institution in KwaZulu-Natal. The title of my study is: **Library spaces in higher education : exploring academic researchers' conceptions.**   I would be very grateful if I am given permission to canvas the opinion of all 124 full-time academic staff members on their conceptions of library spaces. The participation of the academic staff members would make a valuable contribution towards this study. This study will contribute towards increased understanding of the conceptions of academic staff members towards the library space, how they understand the space, what spaces they are using and the nature and effectiveness of this usage.

I plan to interview selected staff (15) from this population of 124. This will be conducted during the course of the second semester of 2012.

The confidentiality of all staff will be maintained at all times and staff are at liberty to withdraw from the process at any time. The material obtained will be kept in secure storage for a period of 5 years and then destroyed.

My supervisor is Professor Reshma Sookrajh who may be contacted by telephone on 031 2607259 or by email: sookrajhre@ukzn.ac.za.

I look forward to receiving a favourable response for you soon.

Yours sincerely

_____

Roshini Pather

PARTICIPANT REPLY FORM

Permission to conduct study

Library spaces in higher education: exploring academic researchers' conceptions.

I……………………………………………………………………(full names of Head of School) hereby confirm that I understand the contents of this letter and the nature of the research project.

I understand that all information gathered in the course of this study will be treated as confidential and participants will remain anonymous.

I <u>grant</u> / <u>do not grant</u> permission to conduct this study

Signature: _____   Date:_____

Please email to: patherr@ukzn.ac.za

Appendix 6: Request for permission to Human Resources Director

Roshini Pather

Tel: 031 2603025 (W)

Cell: 0824563947

28 April 2013

TO:

The Executive Director

Human Resources

University of KwaZulu-Natal

Dear Sir

REQUEST FOR CONSENT TO USE INFORMATION

I am currently studying towards a PhD degree in the School of Education at the University of KwaZulu-Natal. The title of my study is: **Library spaces in higher education : exploring academic researchers' conceptions.** This study will contribute towards increased understanding of the conceptions of academic staff members towards the library space, how they understand the space, what spaces they are using and the nature and effectiveness of this usage.

I have done an online survey of the academic staff in the School of Education in November 2012 and require some information on the research profile of academic staff to back-up this data collected. I would like to request the following information or reports from the Human Resources Division

- Workforce profile : total number of academic staff at UKZN, their gender, race, age, rank/level, i.e Professor, Associate Professor

- And more detailed information for the College of Humanities and School of Education : age of staff, rank, School and Discipline and their area of research.

Access to these documents would make a valuable contribution towards this study. All information gathered in the course of this study will be treated as confidential. I also assure you of anonymity in all reports emanating from this study.

The confidentiality of academic staff will be maintained at all times. The material obtained will be kept in secure storage for a period of 5 years and then destroyed.

My supervisor is Professor Reshma Sookrajh who may be contacted by telephone on 031 2607259 or by email: sookrajhre@ukzn.ac.za.

I look forward to receiving a favourable response for you soon.

Yours truly,

Roshini Pather

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Roshini Pather

Tel: 031 2603025 (W)

Cell: 0824563947

30th October 2013

Director: Library Services

University of KwaZulu-Natal

Dear Sir/Madam,

REQUEST FOR CONSENT TO USE INFORMATION

I would like to request permission to use information from library documents. I am currently studying towards a PhD degree in the School of Education at the University of KwaZulu-Natal. The title of my study is: **Library spaces in higher education : exploring academic researchers' conceptions.** This study will contribute towards increased understanding of the conceptions of academic staff members towards the library space, how they understand the space, what spaces they are using and the nature and effectiveness of this usage.

I would be very grateful if I am given voluntary access to any documentary evidence (e.g. usage statistics, circulation statistics, minutes of meetings, reports) which may provide additional information on the usage of library space in the UKZN libraries. Access to these documents would make a valuable contribution towards this study.

All information gathered in the course of this study will be treated as confidential. I also assure you of anonymity in all reports emanating from this study. The confidentiality of library staff will be maintained at all times. The material obtained will be kept in secure storage for a period of 5 years and then destroyed. I can send you a full or abbreviated proposal should you wish to see this.

My supervisor is Professor Reshma Sookrajh who may be contacted by telephone on 031 2607259 or by email: sookrajhre@ukzn.ac.za.

I look forward to receiving a favourable response for you soon.

Yours truly,

_____

Roshini Pather

PARTICIPANT REPLY FORM

Permission to conduct study

Library spaces in higher education: exploring academic researchers' conceptions.

I……………………………………………………………………………(full names of Director : Library Services) hereby confirm that I understand the contents of this letter and the nature of the research project.

I understand that all information gathered in the course of this study will be treated as confidential and participants will remain anonymous.

I <u>grant</u> / <u>do not grant</u> permission to use information for this study

Signature: _____   Date:_____

Transcript of Interview Protocol

Library spaces in Higher Education : exploring academics understandings

Time of interview: 11.00   Date : 24 July 2013

Place: Edgewood, School of Education   Interviewer: Roshini Pather

File no. : 013 and 014 (33.54 minutes)

Interviewee: Professor Keshav

	Introduction *Purpose of the study. The library space, their usage, nature, understanding* *The online survey was conducted with all academics in the School, this data was analysed the data, findings are presented and I would like to get your responses on the data. Explain the graph*
	Research Behaviour *Office :* *From the data found in the survey, academic staff indicated that the office is primarily used for administration (100%), consultation (97.8%), preparing teaching material (75.6%) and research (63.6%).* *Could you comment on that? As an academic staff or what do u think of the responses of academic staff*
1 2 3 4 5 6	Well, I think the office is basically, you know, the home of the academic, because you have the access to all kinds of things. You got the Internet connection, telephone, dedicated to office, communication to the office and from the office, so forth. You would find most of the activities that a person would engage in, in this room, through the office. That's why lot of the administration, consultation, printing and photocopying and so forth.
7 8 9 10	Interlibrary Loan – a bit. I would have thought that the Interlibrary Loan would be more to the use of the library itself, rather than the office. You got to fill in the necessary forms and so forth. You get guidance in terms of the availability and so forth. But maybe searching for, for books in other libraries, you couldn't because of the system that is available to you You can get into the library system and search in other libraries as well, and that's also

11	a possibility.
12	
13	
	Home : *The survey also suggests that minimal tasks are performed at home. Reading and writing. What is the impact of that? Why do you think this is the case*
14	But for me the reading and writing I would spend more time doing at home.
15	Because for me, that's gives me the space, the kind of quietness that I need, facility to read, the, the time to read. I would think reading and writing much more at home. And you are also thinking, here in the office, you dealing with so many things that your concentration and deep engagement is not happening, you are sort of bothered from one issue to another. But at home, you working for 3 4 hours at time, you mature, be able to get the maximum benefit from the thinking
16	
17	
18	
19	That is exactly what academics are about, the thinking, reflecting, representing their thoughts by writing.
20	
21	
22	
	Library: *That when academic staff visit the physical library, it is used by 75.6% of academic for interlibrary loan. Why is this the case?* *[Not many are aware that you can do this electronically from the office as well. Only 75.6% indulge in ILL, why do you think they are coming to do that?]*
23	Yes, I think that would be consistent as well. People would want to use the library as a service centre
24	
25	So the library as a physical resource basically is there to, for people to know that you can get certain services from there.
26	I think, it's kind of the idea of a library has shifted from a place, a physical place to a concept
27	
28	For me that's more important, that with the explosion of communication networks and tools and communication and getting information, searching the net has far gone beyond the physical environment of a space, a physical space.
29	
30	And that is why you can see that the research is very low.
31	If you compare it to previously, research would be much more higher percentage in the library than now.
32	
33	And also the number of students that we have, with us, for eg. I have almost 12 PhD's students and 6 masters students. And that is on an ongoing basis. It is not a one year

34	thing
35	My access to information, is also via the student.
36	And so when they access , you know, information I also get to know about it
37	That expands my opportunities of being exposed to other readings.
38 39	So the library does not now form a central role in terms of me accessing research materials. I can't remember the last time I visited the Library.
40 41 42 43 44 45	There's a direct and indirect and therefore I believe that this is quite consistent, the increase in the lib, The concept of the lib has expanded beyond the physical space.

	Supervision :
	The data from the survey shows that 71.1% of academic staff supervise Masters students, 66.7% Honours and and 53.3 % Doctoral students.
	Can you comment on that data? What are your perceptions of these figures, why do they appear as they do?
	Why do you think this is happening, the high %.
	What is your comment on how they conduct supervision of their students without engaging with the Library? Where is it done?

46	For me, the supervision, is a process of … enculturing students … to read.
47	to access for research.
48 49	To get to know the field and [long pause] I just think that the more students you have, the more, the more wider the scope of the being exposed to a range of readings
50 51	The library sense if you want to do certain focus areas of research, then it's quite limited. Whereas if you have a number of students you arevsupervising, students have different focus areas. You have much more greater scope
52 53 54 55	The supervision allows the academics to be, …. more exposed to a range of readings. Rather than spread, rather than one student going to the library.

	Access to communication technology

56	Yes, with the smartphones, you can pick up almost anything, it's a computer in your hand. It doesn't mean you have to physically come to the library to access information, access the stuff
57	
58	Improvement and innovation, in technology has really kind of exploded to extend that. Libraries becoming, the physical space becomes obsolete
59	
60	

The data suggests that academic staff are visiting the Library at least once a month (37.8%) , to use the print books (86.7%), current and back issues of journals (42.2%). Why is that?

61	I think there's possibly 2 reasons for that. The explosion of knowledge is largely been facilitated through publications on journals, that are quite extensively available on the Net.
62	
63	And that's seems to be the pushed by researchers, like us, would say to get the more recent publications and in the last 5 years,
64	
65	Your review of literature, should be rather in the last 5 years
66	You are then able to access journals articles that are published in the last 5 years
67	That's most available, kind of source of knowledge.
68	Whereas books, the conceptualization, the printing, the kind of conceptualization to availability , ok, sometime span more than 5 years
69	
70	Ok, so then the information we ask from the library, the books, becomes like information that is obsolete, it's not current
71	The kinds of books that people want to access, would not necessarily be monographs.
72	Monographs would be kinda's people's life, accumulation of knowledge
73	And I think that, the in the university context, where the idea is of teaching and development and in training masters,
74	
75	I mean masters type really, training students to be researchers, the idea of their consulting monographs, that is accumulation of people's knowledge, cannot be such an attractive idea, in accessing information.
76	
77	Yes you would access monographs of people who have shaken the world, in terms of Bourdieu, Foucault, you want to leave those
78	
79	But allowing the students, to access that may not necessary would not necessarily be the best thing. Rather seasoned researchers would want to push their ideas, would grow their owns scholarship
80	
81	May want to then consult monographs to consults how ideas are developed, what is aid. And in that case you would see the frequency of access
82	

83 84 85 86 87	
	In keeping with the physical space, the Research Commons is a feature of the library space and was targeted for postgraduates students largely. But some academic staff are using it for supervision of their students. Why is this?
88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103	It's kinds of 2 things – one is to alert students that there is this … centre , the resource centre and the facilities are there. And they should be encouraged to make use of that and that most important they can get access to almost everything, in terms of support. They can be physically taken to that place. Means that kind of uh symbolic reasons for you going there The second I think is that in our offices, it's a bit small to engage with the students, unlike this office, we have a nice couch It's not conducive to have a good supervision here. Sometime argumentation could raise voices, ok and it's not comfortable when you have your colleagues in the next office and so forth. I think it's nice to go to the centre where you have a room, consultation room. But beyond that, I think it's also to say listen, there is all of the resources available, Lets now go to the library, walk there, here's an example of that things The accessibility information Its nicer, easier. Possibly why people using the Research Commons

**UNIVERSITY OF
KWAZULU-NATAL**

**INYUVESI
YAKWAZULU-NATALI**

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Westville Campus
Private Bag x54001
DURBAN, 4000
Tel No: +27 31 260 8350
Fax No: +27 31 260 4609
snymanm@ukzn.ac.za

30 May 2012

Mrs R Pather (201509725)
School of Education

Dear Mrs Pather

Protocol reference number: HSS/0205/012D
Project title: Library spaces in higher education: Exploring academic researchers' conceptions

In response to your application dated 18 May 2012, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL.**

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number. Please note: Research data should be securely stored in the school/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Professor Steven Collings (Chair)
Humanities & Social Science Research Ethics Committee

cc Supervisor: Professor Reshma Sookrajh
cc Academic Leader: Dr MN Davids
cc Mr N Memela / Mrs S Naicker

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Julie Carpenter. "Discovering research resources: Researchers' use of libraries and other information sources", Cultural Trends, 2001