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e-Learning at the University of Zululand: an exploration of essential embedded library support services

a Mini-dissertation by

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Declaration

I, Audrey Bongiwe Ntuli, declare that this dissertation, "*e-Learning at the University of Zululand: an exploration of essential embedded library support services*", is my own work and has not been submitted for the award of any other degree, at the University of Pretoria, or in any other university. All sources consulted for the study have been indicated and acknowledged by means of references.

Dedication

This dissertation is dedicated to my late parents Caleb Nkos'ayibhekwa and Naina Phazima Sigwebela, and my late aunt Nonkanyiso Mhlamvu.

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Abstract

The use of electronic resources at university library has become exponential in the last decade which can be credited to Information and Communication Technological innovations. University libraries have on their part made use of these technologies by going digital with their support services rendered to users. These technological developments have also exercised their influence in the process of teaching and learning at universities of which the University of Zululand (UNIZULU) is one. Literature (Griffey, 2010) suggests that current library users do not like going to the physical library, but rather prefer the library to come to them. This notion has prompted libraries to provide services and products for e-Learners. For this reason, the research was aimed at examining if UNIZULU is able to effectively support the needs of her e-Learners through her embedded library support services.

To realise the aim of the study, the researcher used a qualitative research approach within an interpretivist paradigm. Data for the study was collected through interviews from three universities within the province of KwaZulu-Natal (KZN). The reason for including data collected from other libraries was to benchmark the embedded support services at UNIZULU against those of other universities within KZN. Thirteen participants were interviewed - four academics from UNIZULU and three librarians from each of the participating universities.

The findings of the study revealed that the UNIZULU library has the essential embedded support services which are able to engage with e-Learning. However the level of effectiveness was determined by several factors. The primary reason for inefficiency, as revealed by the findings, was the absence of the UNIZULU librarians in planning for and supporting the Learning Management System (LMS) of the institution. The absence of the librarians affected communication between the academics and the librarians and therefore also the smooth access to e-Resources prescribed for e-Learners by the academics. For benchmarking purposes, it was realised that the University of KwaZulu-Natal (UKZN) had all the essential embedded e-Learning support services which made the library and the librarians visible via the LMS. There were products that were found at UKZN that were not available at UNIZULU library. At the time of the study, it was established that librarians at the Durban Institute of Technology (DUT) were in the process of becoming part of the LMS planning team. DUT also has a similar number of resources as were found at UKZN but it does appear that UKZN is the most efficient in rendering e-Learning support services.

The researcher recommended that the study be expanded at UNIZULU to include the views of e-Learners along with a wider range of academics and librarians. This should surface a wider variety of inputs to guide improvement in the quality of the service delivery as well as in the collection of products available through the LMS infrastructure.

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Abbreviations

CMS	Course Management System
DHET	Department of Higher Education and Training
DUT	Durban University of Technology
ICT	Information and Communication Technology
ICTs	Information Communication Technologies
ILS	Integrated Library System
KZN	KwaZulu-Natal
LCMS	Learning Content Management System
LMS	Learning Management System
LSS	Learning Support System
MLE	Managed Learning Environment
MOOC	Massive On-line Open Course
OPAC	Online Public Access
TDG	Teaching Development Grant
UKZN	University of KwaZulu-Natal
UNIZULU	University of Zululand
VLE	Virtual Learning Environment

CHAPTER ONE

1. INTRODUCTION OF THE STUDY

1.1 Introduction

The permeating use of e-Learning resources into mainstream teaching has changed the way information is being managed with specific reference to the way information is being stored, accessed and disseminated in institutions of higher learning (Nfila, 2008). For the purpose of this study, the chapter begins with the background of the study, and is followed by the purpose and focus of the study. The rationale, research objectives along with the critical research questions are also discussed in the chapter. A brief overview of the research design and methodology will similarly be introduced. The last section of this chapter provides a concise overview of each chapter in the entire study and their respective organisations.

1.2 Background of the study

The 21st century world is experiencing an exponential change in technological advancement that has never been previously experienced. These unprecedented technological changes have been an integral part of all aspects of human life today. With specific reference to educational institutions, the process of teaching and learning as well as the process of producing new knowledge is gradually relying on technology for its advancement. Within the whole teaching and learning enterprise, emerging theories such as connectivism have emanated as a challenge to the traditional underpinning theories of teaching and learning such as behaviourism and constructivism respectively (Kop, 2011), which were limited to boundaries within educational settings. One of the strengths of connectivism is the blurring of classroom boundaries. Additionally, such theories have not only served the purpose of challenging the previous ideas but have also supported and advanced the use of technologically embedded ideas within institutions of teaching and learning such as universities. Examples of such innovations can be seen through the use of Open Distance Learning (ODL), e-Learning, blended learning digital libraries, electronic smart boards and online publications in most universities around the world as part of their support services. These technological innovations have enjoyed the luxury of success in universities where they have been well implemented. One of the outstanding successes so far is the tremendous strides in providing education to many learners located distant from their university of learning through the process of ODL.

Within the South African context a significant number of efforts have been made to equip South African higher education institutions with these emerging technological innovations. These steps are taken with the intention of easing access and standardising the quality of South African higher education through the provision of technological support services. According to the status report on the state of Information and communication technology (ICT) in South Africa by Moll, Adam, Backhouse, and Mhlanga (2007) it was revealed that the national ICT policy and debate had two main concerns. These concerns were considered to be:

1. There seems to be a lack of discussion and debate to inform ICT policy issues with respect to the higher education sector.
2. Policy documents on higher education, such as they are, offer a very loose framework for implementing ICTs in the sector, suggesting that ICTs are not viewed as fundamental to the transformation of the sector.

Nevertheless, as of 2012 there have been a significant number of investments in e-Learning by the Department of Higher Education and Training (DHET) through the Teaching Development Grant (TDG) to assist in the development of a sound teaching and learning environment in South African universities. One of the beneficiaries of such an initiative was the University of Zululand (Evans and Mutula, 2014). Pertinent to the University of Zululand (UNIZULU) was the use of e-Learning to accommodate new pedagogies and educational technologies that are required for a rapidly growing generation of learners with different learning styles and needs.

For historical purposes, UNIZULU started e-Learning in the year 2000 with the intention of supplementing the use of technology in the classroom (UNIZULU). Its methods consisted of a mix of face-to-face and online course material for all students through the use of the system known as the Learning Management System (LMS). UNIZULU has made a number of efforts to benchmark the support services provided by e-Learning in her institution. This initiative provides numerous services to support the process of quality education through the use of technology. The underpinning consensus of the initiative is that e-Learning makes connections with support services at the university library. The use of technology at the library has hugely changed the way information is being stored, accessed and disseminated to students and academics respectively. Because digital libraries are also linked to e-Learning, they provide technology based information and services to enable librarians, academics and learners to access relevant information and services anywhere anytime, as well as provide support for innovative and life-long learning (Nfila, 2008). Therefore the University of Zululand's library is considered to be digitally oriented (Evans and Mutula,

2014). The digital initiative of the library has come with its own responsibilities and will require an empirical exploration to best understand and tackle the problems effectively.

1.3 Purpose and focus of the study

There are many types of services provided by libraries and over the years, support services at universities have always been seen as vital for the proper functioning of the university. These services are predominantly for the betterment of students and academics although they are not limited to them. This library support service serves the broader mission of UNIZULU which is “to serve the teaching, learning and research functions of the UNIZULU”. The library therefore, supports the mission of the university by aligning her services and objectives to be in line with those of the university’s teaching and learning objectives or processes. The implementation of an e-Learning initiative at the university is ‘forcing’ the library to re-examine the existing services being provided by the library and to establish an answer to the question if these services are in line with the new developments.

According to Lukasiewicz (2007), in order for a library to remain a dynamic and an important part of the university, it must embrace change and create digital libraries that offer innovative reference services and cutting edge digital products such as podcasting and wikis. On the other hand, the library must try to figure out what to do in order to meet the requirements for innovation. Hence, one of the critical successes of the e-Learning initiative of the university is the availability of electronic resources to the online students, (UNIZULU e-Learning Strategic Plan). Nevertheless, according to the e-Learning implementation strategy of UNIZULU, it has been “wrestling with the concept of e-Learning for the last eight years” (Evans & Mutula 2014). That notwithstanding, the university has managed to build an e-Learning portal (see http://elearn.uzulu.ac.za). Though the portal is up and running, it is understood by the management that not everyone is fully involved including the library, and not all academic programs to date have been included. For this reason the study therefore focuses on exploring the quality of the library support services thus far from the perspective of the librarian and the academic staff respectively.

1.4 Rationale of the study

e-Learning is the use of technology in support and as a teaching tool and is currently being used by academic institutions to keep up with competition in the global academic environment. Like all other forces that stimulate change in an organisation, technological programmes in academic institutions or training departments have to be monitored. This is

because university administrators need to know whether the services they are providing are meeting the needs of the academic staff of the institution.

The researcher believes that the e-Learning initiative will give the library an opportunity to integrate library resources into the university curricula and perhaps introduce new services. The researcher also believes that the library needs to create a position –that of the e-Learning Librarian, a new role that will be actively involved in the e-Learning initiatives of the university and also monitors trends in new ICTs so that new services can be identified that the library could introduce or improve. The e-Learning librarian will provide training to library staff, academics, students and the university community on all digital library services.

Therefore, an explorative assessment of the library support services from the perspectives of the librarians and academic staff of UNIZULU with those of the librarians and academic staff of selected universities within the province of KwaZulu-Natal; will serve as an indication of the nature and quality of services being provided within the e-Learning initiative at the UNIZULU library. Additionally, the study will highlight the extent to which the needs and expectations of academics are met.

1.5 Problem of the study

Services provided by academic libraries are seen as important initiatives that can help support and improve distance learning in education. The emergence of the latest ICTs have made it so fast and easy to store and transmit library based information and have also made learning; especially distance learning more effective. It has become crucial for academic libraries to be actively involved in academic matters of the university so that they are able to render services that will benefit the entire university community. e-Learning facilitates the opportunity for libraries to move closer to the core of teaching and learning; which is the centre of university business.

Studies conducted by Evans and Mutula (2014) revealed the importance of creating conducive facilitating conditions for learners and academics to best use e-Learning resources. From the results of the research it could be anticipated that e-Learning resources will be accepted by the majority of students and academic staff at UNIZULU. For academic staff, the direct effect of their behavioural intentions to use e-Learning resources is the most influential factor on their user behaviour based on the support services that are being provided. The study by Evans and Mutula (2014) concludes that, there is an imperative need to create conducive facilitating conditions for e-Learning initiative at UNIZULU. Nevertheless, the e-Learning working group (2013) also revealed that academic staff at UNIZULU had a

low computer literacy rate. This has further compounded the problem in improving the support services that the library has to provide to the UNIZULU community.

The researcher further observed that although UNIZULU e-Learning is only an initiative with the intention to have a well-equipped LMS in the near future, is seems to suggest that the library is not committed to supporting e-Learning to enhance the learning environment by providing innovative solutions to integrate library content and services into existing and future course environments. Chimbwanda, (2010) revealed in an exploration that some of the programmes were poorly implemented at UNIZULU as a proportion of the sample of academic staff and students did not know what e-Learning was and neither how it was being implemented at UNIZULU.

Although literature (Chimbwanda, 2010; Kop, 2011; Nfila, 2008; Sharifabadi, 2006 and Evans and Mutula, 2014) reports that academic libraries are supposed to offer a variety of services that can be customized to meet the needs of a particular course or group of learners, the services at UNIZULU are yet to provide such services. It is therefore, understood that there is a need for e-Learning services at the UNIZULU library to support student learning across disciplines by using online information resources. From the above vantage point, it would be realized that there is a need to explore the current embedded services that the library is providing through the e-Learning initiative from the perspective of the academic staff and the librarian at UNIZULU and to further compare it with that of some selected universities within KZN.

1.6 Objectives of the study

In order to answer the main research problem, the following objectives were set out by the researcher:

- To identify the essential library services (and products) that could be embedded to support and enhance the e-Learning initiative at UNIZULU.
- To understand the implications for the UNIZULU library when embedding its services (and products) in the e-Learning environment.
- To benchmark the quality and quantity of the embedded library services (and products) being provided to support e-Learning initiatives at UNIZULU, against those provided by selected libraries within KZN.

1.7 Research questions and sub questions

To meet the objectives of the study, the main research question underpinning the study was: *Is the UNIZULU library able to effectively support e-Learning?*

The main research question was further divided into sub-questions and in an attempt to answer/ address the concerns underpinning the study. The sub-questions were as follows:

- What are the essential library services (and products) required to support e-Learning?
    - What do academics report regarding their expectations of e-Learning services being provided?
    - What e-Learning services (and products) are being provided by library staff – as reported in literature and that are visible from library web sites?
    - What are the types of services being provided by other libraries within KZN to support e-Learning?
- Which services and products have the UNIZULU library earmarked for embedding in the university's e-Learning initiative?
    - What accounts for the level of e-Learning support services being provided?
    - How do the support services for e-Learning initiatives at UNIZULU differ from those provided by other libraries within KZN?
- How are embedded services, for the UNIZULU e-Learning initiative, being provided by the UNIZULU library staff?
    - What do academics at UNIZULU report regarding their expectations of the embedded library services that support e-Learning?
    - Do the UNIZULU academic staff members have easy access to e-Learning support services provided by the UNIZULU library?
    - Do the library staff members provide for the expected e-Learning support needs of the academic staff at UNIZULU?

1.8 Overview of research design and methodology

To answer the questions mentioned above, the study was located within an interpretivist paradigm. Neuman (2006:81) defines "a paradigm as a basic orientation to theory and research". An interpretivist paradigm was used to explore an in-depth understanding of how the e-Learning initiative and the embedded services at the UNIZULU library for such services function. An interprevist paradigm is a basic set of beliefs that guide action.

Interpretivists are concerned with meanings and thereby attempt to understand daily phenomena through these meanings that people assign to them in their social context (Leedy and Ormrod 2010). Details of interpretivism will be explained in chapter three.

The exploration was done from the perspectives of academic staff and librarians from UNIZULU and some selected academic libraries within KZN. The study further employed a qualitative approach rather than a quantitative approach; to explore the richness, depth, and complexity of how the initiative of the e-Learning embedded services was being implemented by UNIZULU. Both qualitative and quantitative approaches are acknowledged research methodologies Leedy and Ormrod (2010). When using a quantitative approach a researcher collects data in the form of numbers while a qualitative approach is used when collecting data in the form of words or pictures (Neuman, 2006: 41). The richness and in-depth understanding of how the participants make meaning of their experiences is at the core of a qualitative approach and traditionally does not deal with large numbers as one would be making use of a quantitative research approach. This perspective is associated within the interpretivist paradigms in which the main indicator of meaning is the perspective of participants (Henning, Ronsburg and Smit, 2004).

Purposive sampling was used and for this method, according to Bless, Higson-Smith and Sithole (2013: 172) a sample is chosen based on what is considered by the researcher to be the typical units. The typical units in this case were academics that were already engaged in e-Learning at UNIZULU and some librarians engaged with the learning and teaching at UNIZULU and librarians based at other higher institutions in the province that have already embedded their services and products into e-Learning environments.

The reason why this method was selected was because the researcher already knows who the relevant staff members at UNIZULU are who have knowledge regarding the problem being investigated. Academics at UNIZULU would be able to tell their needs and expectations for embedded products and services from the library. UNIZULU librarians also would voice their knowledge regarding the e-Learning support. Librarians at other universities were specifically chosen because they were already rendering embedded services to e-Learners and they would therefore know what products and services are relevant and are being used by their communities.

This approach was used to obtain empirical knowledge of the existing embedded service as well as its characteristics and the participants' opinions with regard to the e-Learning initiative. The study was done using semi-structured interviews, which implied that the participants were free to express their opinions as they deem necessary but limited within the framework of the questions.

1.9 Limitations of the study

Although the study was focused on identifying the e-Learning embedded services which should be rendered by the UNIZULU Library, the exploration was limited to the perspectives of academics and e-Learning library staff only. Therefore the views and opinions of other stakeholders were not considered and did not constitute part of the findings. Furthermore, management related problems or challenges were not investigated as the study considered that the e-Learning program being offered by UNIZULU was only an initiative which was currently in progress. Hence the study concerned itself with how the existing embedded services were effective to the e-Learning staff and how they were being helpful to academics in the process of teaching and learning.

1.10 Conceptualisation of terms

To enhance the efficiency of understanding of the researcher's conceptualisation of key terms, the researcher deemed it necessary to clarify some of the words that might result in an ambiguous interpretation and conceptualisation from that of the researcher's position of understanding. For this reason, the following words were defined from the researcher's own point of view and how they were subsequently used throughout the study.

1.10.1 e-Learning

The term has been used loosely in the study to accommodate ideological flux. Subsequently, e-Learning was considered to refer to the use of computer-based electronic technologies of internet, e-mail, websites and CD-ROMs, and academically related applications and software, to deliver, facilitate and enhance both formal and informal learning and knowledge sharing at any time, any place and at any pace (World Bank, 2009). The learner can therefore access such facilities from both on and off campus. The University of South Africa (UNISA) is the only university exclusively offering distance learning programmes.

1.10.2 Embedded library services

These are a range of services that the library provides to students, researchers and academics to support their teaching and learning. Examples of embedded services include

for example; reference and circulation, facilities, e-Resources, guidelines and online user guides (Kroski 2008).

1.10.3 Digital Libraries

A digital library is a collection of electronic documents, visual, video and audio material stored in an organized manner, available on the Internet or on CD-ROM (compact-disk read-only memory) disks. This is opposite to print forms of storage. Depending on the specific library, a user may be able to access journal articles, books, papers, images, sound files, and videos online. Some authors also used the term interchangeably with virtual libraries, electronic libraries, digital repository or libraries without walls (Nfila, 2008)

1.10.4 Blended learning.

This is the combination of conventional face-to-face instruction in the physical classroom, experiential learning and e-Learning methods (McSporran and King, 2005:4). This form of learning is common in most South African universities including UNIZULU (Boere and Kruger, 2008).

1.11 Chapter outline of the study

The following chapter outline has been provided to guide the reader with an understanding of what constitutes each chapter and how the chapters further explain the study.

Chapter 1: Introduction to the study

This chapter provides an overview of how the study has been organised. This chapter comprises the background of the study, purpose and focus of the study and the rationale and the objectives to be achieved by the study. The research questions were also introduced here along with the research methodology that was used. The chapter ended with an outline of the document chapters.

Chapter 2: The review of relevant literature

This chapter essentially provided all the relevant literature for the study. It was divided into main headings and subheadings to elucidate the reader's understanding of the various aspects related to e-Learning and library embedded services at universities; not only in South Africa but also internationally.

Chapter 3: Research methodology

This chapter describes the empirical research component of the research. The chapter deals with aspects of the research paradigm, sampling of the participants, instruments and how the data were being analysed. The chapter also presented the challenges encountered and some of the ethical considerations that framed the entire study.

Chapter 4: Data analysis and interpretation

This chapter presents an analysis of the data that were collected through semi-structured interviews. The data were analysed through the use of emerging themes which were initially coded and categorised where commonalities across the data were grouped and discussed.

Chapter 5: Conclusion and recommendations

The conclusions were derived from the analysis of the data collected and presented in the previous chapter. The conclusion also addresses the research objectives of the study. Furthermore, the chapter ended by suggesting some recommendations for further studies and a number of ideas for the UNIZULU authorities to consider on matters related to e-Learning embedded services at the library.

1.12 Conclusion

This chapter presented an overall summary of the study. The following headings were discussed; background of the study, the purpose and focus; which centred on the e-Learning embedded services and the crucial role they play for the advancement of the UNIZULU digital library. The rationale of the study was concerned with understanding the extent to which the library embedded services meet the e-Learning needs of the academics and as provided by the librarians. A brief overview of the research design and methodology was also provided. The chapter ends with a summary overview of the five chapters in the study. With the consideration or/and understanding that library embedded services are essential for the success of an e-Learning initiative, the following chapter will discuss the related literature pertaining to the e-Learning embedded services at the UNIZULU library and relate it to other libraries embedded services internationally,

CHAPTER TWO

2. LITERATURE REVIEW

2.1 Introduction

From a generic perspective university libraries amongst other things exist to support the process of teaching, learning and research activities which could be directly or indirectly related. In doing so, one of the most probable steps to take is by making library services available to academics and students who rely on such services for their efficient productivity. According to Otubelu (2011) it is the prerogative of students and staff at academic institutions to be provided with the optimum quality of library services in support of their scholarship. Therefore, it is the duty and responsibility of the library to must make sure that it is able to render relevant services to these stakeholders.

The advent of the new information communication technologies (ICTs) and the internet has changed the way consumers of the library's services access resources therein; furthermore, the new technologies are allowing library users to access information anywhere and at any time without physically going to the library for such services (Boumarafi, 2009). Thachill (2008) goes further to argue that the existence of multiple information access options for users have improved the importance and reliability of libraries by academic and students to an extent that users can access full text information in their desktop or electronic devices anywhere they are in the world. On the other hand, the new ICTs have also provided librarians with many alternative means to address continuous access of those who require services from the library.

Although ICTs have also improved access to the library with the intention to impact the process of learning and teaching at universities, the introduction of this online communication tool has also enabled new lesson delivery methods generally known as e-Learning. It is therefore with this understanding that this chapter discusses related and relevant literature pertaining to e-Learning and its corresponding library embedded services being provided to stakeholders (academics and students). The literature review of this chapter will be divided into three main sections with each of these sections comprising a particular aspect relating to the e-Learning initiative which is an integral part of the focus and purpose of the study. Section one will essentially be dealing with the concept of e-Learning highlighting its merits and demerits. This section ends by considering the contemporary extension of e-Learning within the limits of M-learning and MOOCs. The next section dwells predominantly with issues of mutual inclusivity between e-Learning and the library. It further argues for the digital libraries and link it to Learning Management System (LMS) and finally

the last section of this review elucidates the existing library support service. The information provided in this section was drawn from the experience of the researcher and was guided by literature.

2.2 The concept of e-Learning

While the term e-Learning is the short form of electronic learning, many other terms are commonly used for e-Learning as identified in literature (Paulsen, 2002; Moore, Dickson-Deane, & Galyen, 2011 and Evans and Mutula 2014). Some of these terms include virtual learning, web-based learning, computer-assisted learning, computer based learning, online learning, distributed learning, internet learning, and networked learning. In spite of this plethora of names, the review will predominantly use e-Learning although there might be some interchangeability of the names usage.

The term e-Learning dates back to the 1980's (Moore, Dickson-Deane & Galyen , 2011) and ever since there has been a continuum of innovations on how it is to be accessed and used not only by educational institutions. As a result there are several definitions that have been derived from the entirety or partiality of the concept of e-Learning. There are thus many existing definitions for the term e-Learning and for the purpose of this study the definition of Wang and Whang (2004) has been considered appropriate. According to Wang and Whang (2004) e-Learning "*denotes information and communications technology enhanced learning by delivering learning contents and activities via internet, intranet/extranet, audio/video, satellite broadcast, interactive TV and CD-ROM*."

The above definition is broad enough and encompasses the needs of learners, the expectations of academics and the amount of embedded services that librarians can provide in their assistance for e-Learning at universities. At the UNIZULU library there is an on-going expansion in the provision of such services within the capacity of the library ever since its inception of the e-Learning initiative in 2000 (Evans and Mutula, 2014).

The concept of e-Learning is not without conflicting opinions on how it should be accessed and used. Nevertheless, a majority of these conflicting opinions seems to have been clarified through the use of terminologies that highlight such clarity. Nichols (2003) is of the opinion that e-Learning is accessed through the use of technological tools that are web-based only as a point of access. Whereas Benson et al (2002) and Moore, Dickson-Deane & Galyen, (2011) believe that e-Learning should incorporate all instructional platforms or tools such as the internet, an intranet, CD-ROM, video, audio, satellite broadcast and digital television. According to Sharifabadi (2006), e-Learning is an improved form of distance education

where learning materials are found on the Web and internet and made available for use by both academics and students from the host institution or other institutions depending on the nature of the openness to access. A justification for this form of openness is provided by Boumarafi (2009), who states that e-Learning meets the demands of the information society and ICTs are reshaping the educational environment; therefore e-Learning caters not only for the needs of students and academics but it is also extended to the needs of anyone interested in learning in the society or universe. Boumarafi (2009) goes further to argue that e-Learning is an interactive and collaborative learning process although he acknowledges that such levels of service are rarely open to the general society at large.

With respect to blended learning and the relationship it has with e-Learning, Karin and Dih (n.d.) state that e-Learning is a blended form of the traditional face-to-face method of teaching which is combined with the use of ICTs to improve the learning experience. From this perspective therefore, blended learning is a combination of both the traditional face-to-face learning and e-Learning respectively. The present state of the e-Learning initiative at UNIZULU is believed to be at this state (Evans and Mutula 2014) where face-to-face teaching is being complemented by e-Learning (Chimbwanda, 2010).

The process and applications of e-Learning include computer-based learning, Web-based learning, digital collaboration, virtual education and computer mediated learning (Moore, Dickson-Deane & Galyen 2011). According to Otubelu (2011); Boumarafi (2010); Sharifabadi (2006); and Nfila (2008), e-Learning has become so important to education [with specific reference to higher education] because it has proved to be flexible and convenient for both the librarians and academics although this is not limited only to these two parties. Furthermore, the fact that the act of learner and the position of the instructor do not necessarily have to be at the same place or bounded environment makes its flexibility outstanding as a tool for teaching and learning.

However, the researcher is of the opinion that e-Learning should take place in a digital environment and make use of the latest ICTs for learning and agrees with the latter definition of e-Learning where a variety of formats and/or platforms are included. The section below takes a closer look at the advantages and disadvantages of e-Learning.

2.2.1 The advantages of e-Learning

e-Learning has become increasingly very important in academic institutions to increase their number of students and also to improve access to educational resources on or away from campus because of its flexibility and convenience. McLean and Sander (2003) argued that

e-Learning has emerged as an influential force in academic institutions and every university should be moving towards this dynamic learning facility.

To begin with, e-Learning can effectively take place in a digital environment provided all the necessary requirements for connection are made available. Karin and Dih, (n.d) in their support for the use of e-Learning state that e-Learning can support both distance and lifelong education. This is possible because of e-Learning's flexibility and ability to store large quantities of information to be used at a later stage when needed. Therefore, there are no geographical restrictions to e-Learning. This implies that, anyone involved in e-Learning may be anywhere in the world as long as the required instruction content is accessible for them to use. For this reason it can be concluded that e-Learning takes place where the student is located not at the institution where he/she is registered Vatnal, Mathapati and Prakash (2004). This is a premium advantage that e-Learning has over the traditional face-to-face approach to teaching; where the student and teacher have to be in the same learning environment simultaneously for the purpose of teaching and learning. Furthermore, Otubelu (2011) goes further to argue that e-Learning is a more convenient way for people with commitments to their scholarship to attain their objective irrespective of their physical availability or unavailability at the site of learning. This makes it possible for them to be able to avail themselves compared to the form of the traditional learning and learning environment.

To briefly elaborate on the advantages of e-Learning over the traditional face-to-face teaching and learning approach Kruse (2004) as cited in Chimbwanda (2010) provided a list of advantages of e-Learning which are as follows:

- e-Learning allows interaction between people. Communication can happen between students and students, or students and lecturers or lecturers and lecturers.
- e-Learning allows for information sharing simultaneously especially when learners post messages to mentor one another.
- When classes are recorded and e-Learners are able to access their lectures, even if a class has been missed for whatever reason, they can listen to this many times at their own convenience.
- e-Learning programmes facilitate access to information and help students to improve knowledge retention since they can read it as many times as they may need to in order to have mastered what is being learned.
- e-Learning enables students to contribute to the learning environment by sharing information they have accessed.

- All individuals involved in e-Learning within the institution gain new skills and knowledge to stay competitive in the digital age.
- e-Learning provides self-paced, self-directed and individualised learning experiences especially for those students who want to study at their own pace.

From the above mentioned advantages, it is obvious that e-Learning has challenged the limitations that were imposed and experienced by students, academics and other users of the e-Learning services.

2.2.2 Disadvantages of e-Learning

In spite of the advantages discussed above e-Learning has its own disadvantages. These disadvantages have played a role in restricting the use of the e-Learning services that are being provided for by institutions of higher learning. Some of these disadvantages have been mentioned by Kruse (2004) as cited in Chimbwanda (2010) and include the following:

- e-Learning requires technical equipment such as computers or an alternative and an internet connection. Unfortunately, those who are expected to use e-Learning are not all in the position of having or able to easily acquire these resources for the purpose of learning. This is a reality for students from poor families who do not have access to funded education.
- The cost of acquiring a computer may be much of a challenge to students.
- There is a need for both academics and students alike to be trained in using these services efficiently. Sometimes it becomes difficult to train both the student and the academic on how to use these embedded services. With respect to UNIZULU, Evans and Mutula (2014) report that most academics are not computer literate and unfortunately they are not willing to make themselves available for training. This according to Evans and Mutula (2014) is a huge problem in the effective use of e-Learning at UNIZULU.
- The pace of innovation associated with e-Learning is too rapid to maintain. This has emerged as a problem to those (academics, students, librarians and even institutions) that have to maintain all these changes.
- Not all the electronic devices seem to be compatible with the applications and software available.

Although the advantages of e-Learning outweigh the disadvantages, the presence of these disadvantages has played a significant part in limiting the acceptance of e-Learning over the traditional face-to-face approach to teaching and learning. The use of e-Learning initiatives at UNIZULU is predominantly in support of blended learning but the

library needs to consider e-Learning in the context of the earmarked objective that was initiated in 2000 at UNIZULU.

2.3 The contemporary extensions to the traditional use of e-Learning

Although e-Learning has only been in existence since 1999, there are alternative methods and devices to which e-Learning is being practiced today; which are not limited to a desk top or laptop computer. When e-learning is delivered through a mobile device it is referred to as M-Learning and when e-Learning is provided as a 'free' lifelong learning initiative to anyone wanting to participate it is known as a Massive On-line Open Course (MOOC). These two subsets of extensive approach to deliver e-Learning are discussed in more detail below.

2.3.1 Mobile Learning as a form of e-Learning

Mobile learning, which is known for short as M-learning, is a form of e-Learning which is enabled by the use of mobile computing devices communicating over wireless networks. It is considered as an extension of e-Learning. Quinn (2000) defines M-learning as the intersection of mobile computing and e-Learning: accessible resources wherever you are, strong search capabilities, rich interaction, powerful support for effective learning, and performance-based assessment. Additionally, Pinkwart et al (2003) view M-learning as e-Learning that uses mobile devices and wireless transmission exclusively.

According to Haag (2011) M-learning is considered as an alternative means of e-Learning and is showing the potential to be widely accepted by consumers and seems to be more effective than the computer-based e-Learning approach. M-learning involves the use of mobile devices like Smart phones, PDAs, tablet PCs and notebooks. These mobile devices can perform all functions necessary for e-Learning and some have even argued that they perform the function better due to their portability and user friendliness (Kroski, 2008). Most mobile handsets have connectivity with the internet service and have the same functionality as personal computers which are not as mobile as these new mobile devices. Furthermore, most mobile devices currently come with a built-in Wireless Fidelity (Wi-Fi) and Wireless Application Protocol (WAP) which make it easy to access the internet provided there is availability of the internet service (El-Hussein & Cronje, 2010).

M-learning is also accessible anywhere; the learner or the instructor do not necessarily need to be in the same location. It is also collaborative –there is sharing of content among everyone and instant feedback and tips. El-Hussein and Cronje (2010) state that M-learning also has the capacity to enhance a learner's sense of individuality and community as well as his or her motivation to learn through participation in collaborative learning with peers.

Moreover, mobile devices evoke a sense of ownership of the learning content to the e-Learner when he/she actively participates in collaborative activities (Mbambo-Thata, 2008).

M-learning is gaining popularity amongst the youth and consequently the students and this has further proved to be the convenient form of e-Learning (Kroski, 2008). It is very convenient for students and academics who are constantly moving from one place to another due to a variety of reasons. This calibre of people logically prefer M-learning as a form of e-Learning over face-to-face learning because they can use their mobile devices for this and save money and time by not going to an internet café or buying expensive computers that still need a modem, whereas a mobile device is all in one.

It is common at a higher learning institution for both students and academics to frequently utilise their mobile phones. According to the study conducted by Mokoena (2012) students prefer to use their mobile phones for learning, some even take snapshots for things like timetables, diagrams, or record their lessons for their peers who may not happen to be in class. The Horizon report (2013), indicated that tablet devices are gaining more popularity with students because they can also use these as laptops. The report goes further to state that these tablets are gaining traction in the education sector. The reason for the traction in education was because they are portable and students are seamlessly loading sets of apps and content of their choice onto these devices. Furthermore, Mokoena (2012) states that students are comfortable with using tablets and other mobile devices for both social and academic settings. Similarly, students can use tablets for many educational uses like downloading and reading e-Books and course material, watching videos, attending an online class, searching for a library material and much more. Because of their large screen display, tablet devices are ideal for one-to-one learning. M-learning is spreading rapidly and it appears that it is becoming the preferred delivery method of instruction in academic institutions (Mokoena, 2012).

Academic libraries are beginning to realise the importance of these devices in rendering their services and have begun to accommodate access and display by developing mobile applications (commonly known as ‘apps’) for library services. According to Kroski (2008), libraries are leveraging mobile technology to deliver robust library services to users without leaving their comfort zones. Since many students in universities use mobile devices, the library can no longer ignore this medium. Students now prefer to use their mobile devices to access library services. As M-learning is part of e-Learning, the library is compelled to render mobile services as well to e-Learners concurrently.

2.3.2 Mobile Library services as an impending reality

In 2010, Lippincott predicted that more students would afford internet capable phones and they will seek streamlined ways of locating information using mobile devices. This development seems to have occurred faster than was predicted. Moreover, Mokoena's (2012) research supported Lippincott's prediction which was based on the findings that many students at universities were already using mobile devices for accessing the internet and this means that they would also want to access library services as well through this interface. According to Griffey (2010), current library users do not like physically going to the library, rather they want the library to come to them. This means that the library must be able to reach out to its users through their preferred ways of accessing the library resources. To meet these needs academic libraries have to deliver the services to the users through mobile technology. Griffey (2010) further ascertains that as libraries move towards user-focused services they will need to understand and exploit the use of mobile technology. Most mobile handsets have connectivity to the internet and have the same functionality as personal computers. Griffey (2010: 2) argues that for library users, mobile phones have become their information hub.

Libraries are using mobile technology to promote and improve library services by offering mobile access to their library websites, services, e-Resources and the online catalogues (Kroski 2008 and Vollmer 2010). According to Mbambo-Thata (2008) mobile technology enables libraries to reach remote students. Mobile technology enables libraries to provide enhanced library services (Vollmer 2010).

According to Griffey (2010) and Kroski (2008) libraries should design mobile-specific websites that will provide more freedom to content and structure so that they are able to offer information about their collections and services and provide mobile access to their web OPAC (Open Public Access Catalogue), e-Resources, mobile reference services, create educational videos and multimedia content, audio tours and also use these for SMS notifications. To support learning in general and e-Learning in particular, some academic libraries are providing mobile devices for use within the library or loan these out to their users (Lippincott, 2010). According to Lippincott (2010), many libraries are loaning out laptop devices and some also loan video and still cameras, audio players like MP3, and some will loan iPods, and headphones. This is more common in the developed countries than in the developing and less developed countries. Notwithstanding, these libraries are doing this to make sure that users are able to easily access library collections and services.

According to Kroski (2008) and Vollmer (2010) the following library services can be accessed through mobile technology:

- Web OPACs via mobile-optimized websites.
- Mobile collections – libraries work with third party content providers to deliver e-Journals, e-Books, audiobooks, audio and video courses, and any other multimedia.
- Mobile library instruction – libraries deliver library instruction via mobile technology. For example, libraries create podcast series for library users on the go.
- Mobile databases – publishers develop free mobile apps for users in order to be able to access their content on mobile devices.
- Short Message Service (SMS) notifications – libraries use SMS for sending text messages to users for many reasons. Examples are: reminders of the availability of previously requested books, reference services, announcements, and news.
- The library can shop and download e-Books from retailers like Amazon and Google books.

  Although the above mentioned mobile services are supported by the library for the purpose of teaching and learning e-Learners embedded services can broadly speaking do the following:

- Search the library catalogue and electronic resources and download full-text into their devices.
- Search for e-Books and download these into their e-book readers.
- Easily be connected to their subject librarians for queries by using QR codes, social media chat tools like Facebook and Twitter or a simple SMS.
- Check their library accounts, renew and reserve library materials.

From the above review one would realise that the mobile library services are inevitably becoming an integral part of M-learning and as result of this integration, the embedded e-Learning initiative is also being propagated within the library.

2.3.2.1 Advantages of M-learning

The inevitable presence of M-learning as a form of e-Learning along with their robust presence as part of the services being provided by the library have only been possible due to their advantages they possess over other forms of services being provided such as, the traditional none internet dependent services of some of the libraries. Although some of the

advantages are relevant and common to e-Learning in general, the set of advantages have been provided due to their M-learning specifications and benefits. These advantages have been briefly explained by Johnson, Trabelsi and Tin, (2008) as follows:

- M-learning allows students to be more productive and be able to study at their own pace.
- Mobile technology can facilitate access to information, knowledge and learning anywhere and anytime.
- The presence of M-learning makes the use of a phone more indispensable for learning not only by communication with the mobile apps but also for quicker references.

3.2.2.1 Disadvantages of M-learning

In spite of the above mentioned advantages, there are a number of challenges for M-learning and these challenges play a huge role in limiting the use of M-learning by a significant number of people who may or perhaps need to depend on it for their teaching and learning. Johnson, Trabelsi and Tin (2008) have provided the following as some of the problems academic institutions may experience when delivering e-Learning through the use of mobile devices.

- Connectivity

The major disadvantage of M-learning is connectivity. If there is no network signal in the area where the e-Learner is at that particular moment, then that person will have problems of connecting to the class and will not be able to have access to any service needed. Also mobile devices need to connect to WI-FI, and most of the time this type of network is restricted in some areas and that means no access to the internet for that individual.

- Bandwidth

If Wi-Fi connection has bandwidth issues, the mobile device will perform more slowly and will not be able to download any content. Downloading content requires a much faster connection with a bandwidth appropriate for downloading.

- Battery life of the mobile device

The life of the battery for the mobile device is very important. The battery may be exhausted before the class is finished.

- Screen size

Most mobile devices, especially cell phones, have small screen size and this may be a problem because text cannot fit into the small screen and one has to keep zooming text which can be annoying to some people.

- Operating system

Mobile devices have different operating systems and these have various levels of software compatibility. There may be problems with the content of e-Learning. It might not download to certain devices because of their operating systems and devices might not be compatible with the e-Learning system.

- Cost of the device

The high cost of mobile devices is also a problem especially to students because some cannot afford to buy smart phones that will have all the services that they would have preferred to have. Also mobile devices are dynamic and this means e-Learner have to occasionally buy new devices.

2.3.3 MOOC as a form of e-Learning

In the most explicit and simple words, MOOC (Massive Open Online Courses) are online courses that are open for anyone in the world to take usually for free and not for credit, (Kop 2011) and these courses have had anywhere from a few thousand to over 180,000 people enrol in California alone (Howard, 2013). Some universities have reported having offers for some MOOC participants to buy or receive certificates confirming their understanding of the material that was attended through MOOC. The students of these courses have minimal involvement with their lecturer, or facilitator. Usually, students watch short video lectures and complete assignments that are graded either by machines or by other students which is peer assessment. This also helps the lone lecturer or facilitator to be able to support a class with hundreds of thousands of students or participants as they are sometimes called.

Some users of MOOCs are pushing for MOOCs to have some credit value at the institutions at which they are being offered. Advocates of MOOCs have big ambitions, and that makes some college leaders nervous about the on-campus courses usually offered face-to-face. Sometimes these courses which are usually free are from very reputable universities in the world, with UNISA being one of the best examples in South Africa. Although those advocating for these courses cannot predict exactly how these courses would change the education landscape, there is nonetheless an expectation of its worldwide use. Their main argument being that what they learn does not only contribute to what they know but has a

positive impact on their jobs or what they intend using that knowledge for in the near future (Diaz, 2013).

Gerber (2013) in his campaign for the use of MOOCs for professional development and to be used by on-campus students, advocates that a university's response to some key demands, advice and/or questions would be important for the success of on-line learning at the said university. The questions to be responded to are as follows:

1. How is the library involved with MOOCs.
2. Start talking/collaborating/sharing between libraries of other institutions with respect to MOOCs.
3. Some of those dealing with online services at the library should also take some MOOCs.
4. The library should be proactive in licensing and accessing of study materials.
5. Libraries should also create some MOOCs or have their own MOOCs.
6. Just as it is with most online courses, the library should support MOOC faculty and incorporate them into their embedded services.
7. The services should not be provided only for online services but also to MOOC students as this would and perhaps could solve the gap created by the absence of face-to-face contact.

Besides universities libraries rendering their embedded services for those offering MOOCs, the university, usually the academics also start-up with several companies to offer these courses (Kop, 2011). The essence of this approach by some of these universities is to introduce an online form of work integrated learning on the assumption that those who go for MOOCs are also working. Generally, MOOCs bring along with them much uncertainty and many opportunities. If these opportunities are effectively and carefully harnessed, they will certainly produce the best results universities can have through their online services. On the other hand, the seemingly volatile nature and scepticism involved with MOOCs make the entire use by libraries and some universities stakeholders uncertain of the resilience and future sustainability of MOOCs.

2.4 The mutual inclusivity of e-Learning and the library

E-Learning has radically changed the way libraries deliver their services to library users. Covi and Cragin (2004) indicated that e-Learning will have a radical effect on the manner in which libraries will render their embedded services to the institutions they serve. The indication was based on the fact that with the new model of education, academic libraries have become flexible, accessible and up to date in support of e-Learning. Academic librarians are therefore in search of better ways in which they can support this new learning method (Nfila, 2008). Vatnal, Mathapati and Prakash (2004) believe that librarians and libraries are the important factor for a successful e-Learning library environment. Supporting e-Learning will subsequently ensure the success for e-Learners as well as their academics that also use the resource for their teaching and research activities. According to Vatnal et al, (2004) academic librarians should become a part of the e-Learning process and actively participate in the learning process by providing online interaction and guides, modules, as well as a reference service.

Otubelu (2011); Boumarafi (2010); Sharifabadi (2006); Nfila (2008), ascertain that academic libraries should become involved in the e-Learning process of their institutions since they are there to support learning and teaching and library services are very important for teaching and research. Boumarafi (2010) advocates the importance for libraries to understand e-Learning concepts and mechanics. This enables the library to offer effective services to the e-Learner consumers. Such advice seems to have been considered by many libraries that are currently offering training programmes for their staff to keep them up-to-date with the current trends of activities such as is the case with the UNIZULU library (Evans and Mutula, 2014). Moreover, Dempsey (2006) also ascertains that libraries have to co-evolve with changing research and learning behaviours in a new network space. Such engagements according to Dempsey (2006) have the ability to improve on the quality of the embedded services provided since libraries are key players in the education process particularly in higher education. As early as 1998 Cooper and Dempsey, as cited by Johnson, Trabelsi and Tin, 2008, argued that librarians should change their roles as information providers and be educators. e-Learning provides the ideal platform to easily do so.

Since e-Learning takes place at the location of the student, the library must also offer its services to the learner bearing in mind that the student is not on campus. Traditionally, library users were supposed to visit the library to access its services physically and unfortunately only at the time when the library was open. But all these have changed with the emergence of ICTs services that have played a significant role in providing flexibility amongst other advantages to the library of today. Currently it is the library that has to avail itself to the user. In other words the library should always be available to the user and be

able to offer any service needed within its reach. Thachill (2008) argues that if libraries want to remain dynamic and important in the education process they will have to redefine their roles according to those of the changing pattern of technological innovations; be constantly up to date with the ever changing technology. Furthermore, Lukasiewicz (2007) claims that to be dynamic and important, academic librarians must embrace change and create digital libraries that offer innovative reference services and other cutting edge digital products. The digital library allows e-Learners to access the library.

According to Lukasiewicz (2007) and Nfila (2008) it is due to the proliferation of distance education and e-Learning that academic libraries have been compelled to develop digital libraries and to introduce these libraries into the education process. These claims by these authors have been proven to have some validity since academic librarians are always playing catch-up with technological innovations. That notwithstanding Nfila (2008) ascertains that digital libraries provide technology based services and information to the end user, therefore keeping themselves in line with the current technological trends even though playing catch-up. Therefore, digital libraries have been able to provide relevant services to support e-Learning at institutions of higher education. Sharifabadi (2006) also reveals that digital libraries are very important to e-Learning because they are considered as a federation of library services and collections that function together to create a digital learning community.

Additionally, Sharifabadi (2006) states that access to current research and needed information within a well-developed infrastructure can provide faculty members and students with a unique opportunity to carry out deep research and to teach and learn more thoroughly. Likewise, Thachill (2008) reported that e-Learners are showing great demand for online and remote access to materials that can help towards their studies. Academic libraries have to meet this demand by rendering appropriate services to distance and e-Learners. This could or should be done by developing services that are integrated with the support of e-Learning from the perspective of the academics and that of the students respectively. Otubelu (2011), concludes that e-Learning has created better learning opportunities for academic libraries which are unprecedented and they must therefore be continually involved in the entire learning process by integrating their services into e-Learning systems and initiatives such that it can be easily accessed by students and academics.

2.4.1 Advantages of supporting e-Learning

Considering that library services are essential for the success of e-Learning and how they have contributed to the process of teaching and learning through the embedded services that librarians render; it is therefore of no doubt that these services have in themselves advantages and disadvantages that promote their usage as well as hinder their use. The following points explain the benefits academic libraries receive from supporting e-Learning as well as incorporating them into their fundamental service:

- Having its collection in a digital format and available on the internet popularises the library collections and services.
- e-Learning promotes the use of the library and has led to an increase in the number of people using the library.
- Creates a positive image for the library.
- The online training sessions, which are offered by librarians and the information about the services and resources to remote users or e-Learners, encourages library users to use the library's resources (Gruca 2010).
- According to Gruca (2010), online library instructions can replace and complement traditional training and this can improve library training and relieve staff from their traditional training sessions.
- Hadengue (2004) denotes that e-Learning offers librarians a chance "to redefine learning objectives in information literacy and to share with academics the task of providing information courses to students."
- By liaising with academics, librarians get an opportunity to collaborate with them.
- e-Learning also improves the flow of information between departments.

2.4.2 Disadvantages of supporting e-Learning

Although there are a number of advantages there are however some unavoidable disadvantages. Dhiman (2012) denotes that supporting e-Learning comes with two main problems and these are reported below:

- Libraries are faced with copyright and intellectual property issues with regard to supporting e-Learning. Researchers, staff and students using digital libraries have restrictions on printing or downloading online content. Publishers that supply electronic information to the library may charge library users for downloads and the

printing of these digital materials. The library should negotiate with the publisher on a reasonable way that can help users to download information without paying much.

- Security in the access of library's electronic resources.
  Libraries have to make sure that only authorised library users have access to the electronic resources. Libraries subscribe to various e-Resources for their users and they need to make sure that only their library users have access to these e-Resources.

2.5 Digital libraries

The libraries play a major role in learning and research and therefore libraries going digital should be considered (Thachill, 2008). Since e-Learning takes place in an online environment, libraries need to develop digital libraries in order to support e-Learning. Some of the examples of the newly introduced forms of digital libraries introduced recently at UNIZULU are electronic resources which include e-Books, e-Journals, etc. which could be found at the online portal of the university (http://elearn.uzulu.ac.za).

Digital libraries store their collections in digital formats and can provide electronic services that can be accessed at anytime and anywhere, and this supports distance and e-Learning methods (Johnson Trabelsi and Tin, 2008; Karim and Dih (n.d), Nfila, 2008; Otubelu, 2011; Sharifabadi, 2006). In a digital library the entire library collection is available in digital format. This is done by turning the printed materials into electronic formats in response to providing support for e-Learning. Libraries develop digital libraries as self-service centres where users are able to help themselves in finding information anytime and anywhere. In support of this statement Sharifabadi (2006) argues that librarians have transformed what they used to do in traditional libraries into appropriate services for the digital or virtual environments. They have customised their services and resources to suit e-Learners.

e-Learners need to access the library at any time 24 hours of a day and at any day of the week. Such flexibility of access can only be supported by the digital library. A digital library is described by Krishnamurthy (2005) as the library without walls, and he defines digital libraries as:

"…*electronic libraries in which large numbers of geographically distributed users can access the contents of large and diverse repositories of electronic objects*."

This definition therefore emphasises the flexibility of access of digital libraries. These libraries contain electronic objects such as networked text, maps, images, digital videos, and electronic catalogues. Digital libraries serve as facilitators of providing information and

knowledge to the library user. They also, according to Sharifabadi (2006), bring together people, collection and services supporting the whole cycle of dissemination, preservation and creation, of data, knowledge and information. Sharifabadi (2006) argues further that digital libraries can change the fundamental aspects of the classroom that have an impact on teaching and learning.

Sharifabadi (2006) ascertains that, when digital libraries support e-Learning the following could happen:

- It is easier for both students and educators to access and retrieve library resources.
- Therefore the student's performance can improve.
- The quality, quantity and comprehensiveness of Web-based learning resources will also increase.
- Library resources are always available.

Digital libraries provide seamless access to electronic library services and resources. Through digital libraries, users can access a range of electronic resources such as electronic services, online reference services, electronic databases, electronic journals, electronic books, electronic theses and dissertations and electronic reserves. e-Learners and instructors are benefiting through digital libraries and they can work on their assignments or research with ease. Digital libraries were built to provide directions to e-Learners and to rescue them from information overload, (Sharifabadi 2006). Academic librarians can play a major role in the success of e-Learners and every library user as well. Users become overwhelmed by the various information resources and need the librarian's guidance on how to find relevant information. Librarians can train e-Learners in various ways that they can use to search for information in digital libraries in order to avoid information overload.

The e-Learner needs to be able to access the library especially when connected to the learning system. Therefore, it is the role of the library to make sure that this need is satisfied by making its services accessible through the learning system which can only be accomplished by linking the learning system into the library services.

2.6 Linking library services into Learning Management Systems

According to Mitchell and Watstein (2007) there are many terms used for an e-Learning system. These terms include: Learning Management System (LMS), Managed Learning Environment (MLE), Virtual Learning Environment (VLE), Course Management System (CMS), Learning Content Management System (LCMS), or Learning Support System (LSS). The researcher prefers the term LMS because it is the term that is widely used.

Reviewed literature suggests that library services should be linked into the e-Learning curriculum by integrating their resources and the library's resource management system into the LMS. The LMS is therefore seen as a platform that can be used by the library to participate in the academic curricula and allow access to its services. Boumarafi, 2008; Rieger, Horne and Revels, 2004; McLean and Lynch 2004); Skank and Dewald, (2003); Nfila (2008), confirm that library e-Resources should be linked to the curricula and in that way the library will be supporting the academic process as well as the learners. Sharifabadi (2006) ascertains that linking the library to the LMS is required to "provide a meaningful connection between learning activities and learning resources." Sharifabadi (2006) states further that the digital library can help the e-Learning teaching staff by providing information content.

The researcher also believes that this is a strategy that can be used by the library to support e-Learning. This will ensure the library's presence in the curriculum. The LMS could improve collaboration between the library and academics. It is desirable that an e-Learner be able to access the library system through the LMS without going out of the learning page and opening another page where he/she is able to log into the library to access its services. Students can do searches on library materials from within the LMS. They can also get a direct link to course reserves or their student information.

McLean and Sander (2003) noted that "e-Learning integration offers libraries a powerful medium for reaching faculty and students directly as they engage in teaching, learning, research and outreach. In turn, integration provides enriched services for an academic community that has used traditional library services. It offers a way to reach those faculty and students who have begun to ignore the library and go directly to the web for their information needs." The integration can help the library to become an integral part of the e-Learning process and promote the availability of the library. Boumarafi (2009); Mitchell and Watstein (2007) also ascertain that a LMS provides tools that allow interaction between the library, academics and learners and this gives the library a chance to grant access and deliver continuous electronic services.

Academic libraries can build strong relationships with faculties by liaising with the departments with regard to library services and resources and students' instructional support. This relationship is essential for the success of the library and both the librarian and the academic will be sharing information and knowledge. Johnson Trabelsi and Tin, (2008) ascertain that "sharing knowledge and information among library staff, researchers, faculty, students, and other departments within the institution encourages them to work together, develop their skills, and form strong and trusting relationships," and can build effective channels of communication.

2.7 The embedded library services provided for e-Learning initiatives

Many academic libraries have begun to make their print and electronic resources easily accessible to both students and academics; they also provide an integrated learning space for their academic community to support collaborative learning (Tachill, 2008).

A review of literature (Nfila 2008; Taha 2004; Sharifabadi 2006; Otubelu 2011) has indicated that the following services are being rendered by academic libraries to support e-Learning initiatives in their libraries: web OPACS, integrated library systems, e-Resources, e-Journals, e-bBooks, Electronic Thesis and Dissertations, Electronic databases, e-reserves, e-Reference services, Digital Video and Audio, Information Literacy, Learning Commons, Digital repositories, Web 2.0 Tools, and Mobile Technology Services. Each of these is discussed in more detail in the paragraphs below.

2.7.1 The support service of Web OPACs

Libraries use OPACs to grant access to all library resources to their users. OPACs bring all libraries' resources together and users are able to access both electronic and print resources of the library from one access point. Most library systems have their OPACs accessible through the internet and these are called web OPACs. Academic libraries are using web OPAC as a gateway to their electronic resources. Due to an increasing number of library users who need online access to library collections, academic libraries are using web OPACs to facilitate information retrieval and to avoid confusion (Johnson, Trabelsi and Tin, 2008). For example, the University of Botswana, as reported by Nfila (2008), links all their electronic resources to the web OPAC to grant remote access to library users. e-Learners can already be connected directly into their library and search the holdings of their library anywhere in the world. Via web OPAC, e-Learners can be linked to their circulation information, e-reserves, electronic journals, e-Books, electronic databases, and institutional repositories.

Academic libraries are using portals as a single point to access all electronic resources through the Web OPAC. Konnur and Kacherki (2006) define a library portal as a "single access point combining the library catalogues, subscription databases, subject gateways, electronic journals etc." Portals enhance searching by integrating results from all libraries' e-Resources.

Academic libraries are making use of these portals to make information resources available to academic faculties. Students and academic staff can search for scholarly information in one search. Murray (2003) argues that if academic librarians want to win library users and avoid competing with Google, then "they must offer a Web presence that delivers relevant, quality approved and personalised access to resources and library services." The University of Botswana (Nfila 2008) developed subject specific portals in order to have all their resources and services linked to academic departments. According to Nfila (2008) by using portals, the library becomes visible and relevant to academic departments.

2.7.2 The support service of Integrated Library Systems

Libraries are linking their Integrated Library Systems (ILS) into LMSs for their users to have one point of access to library resources. According to McLean and Lynch (2004) the ILS and LMS need to interact so that library services and collections are exposed in the LMS environment learning objects. This interaction must include all library services such as virtual reference services, training modules and access to bibliographic tools. (McLean and Lynch 2004).

Literature (Nfila 2008; Taha 2004; Murry, 2003) shows that there have been initiatives where ILS and LMS companies collaborate in finding ways of making sure that these systems work together effectively for the good of the library users. According to Richardson (2004) ILS vendors work with LMS vendors in linking library resources into the learning system. Therefore such systems will definitely reflect on the needs of the learners and academics who are arguably the end users of the product.

2.7.3 e-Resources as a support service

Providing information in an electronic format is one of the primary functions of an academic library. It is easy for users to access library resources if they are in an electronic format. Therefore, academic libraries are providing access to a range of resources in an electronic format and they call these electronic resources. Electronic resources (e-Resources) are online library collections that can be accessed directly via the internet- enabling users to access the library's electronic materials remotely or online without having to come to the library. The library's electronic resources include e-Books, e-Journals, e-reserves, electronic theses and dissertations and digital image collections.

Access technology could sometimes allow library users to access e-Resources with just one login, which in this case turns to restrict access to the e-Resources. According to Edwards (2013: 34) ezproxy, the technology used at UNIZULU provides remote access to web-based licensed databases. Ezproxy therefore works as an intermediary between the library's e-Resources and library users.

2.7.3.1 e-Journals

Electronic journals are also referred to as e-Journals. These e-Journals are scholarly journals which are published and accessed through the internet. Academics and perhaps their institutions do subscribe to packages of e-Journals so that library users have access to scholarly information. A library's ability to provide access to many credible e-Journals is one of the most profound support services it can provide, and to further make such service admirable by academics and researcher an article is available in full text hence accentuating the value and advantages of library embedded services.

Jain (2012) states that many e-Journals now are available as open access journals and this means that libraries need not to pay subscription fees to these. Users can have access to full-text articles free of charge.

2.7.3.2 e-Books

Electronic books are also referred to as e-Books. An e-book is usually an enhanced, digital version of a print book. An e-book is accessed via the internet using a desktop computer or laptop or via a mobile device connected to a WI-FI network. Academic libraries are subscribing to e-book packages from publishers for their library users. There is no standard way of managing e-Books. They are often incorporated into library catalogues and/or on the libraries' electronic resources websites. Some libraries will have a category which has e-Books only and in other libraries e-Books will be found in amongst all their electronic databases. But whatever way these are placed in the different libraries they are very useful to the e-Learner or remote library user. Librarians need to train their users in how to access these e-Books on the website or from the library system.

e-Books have an embedded functionality that allows users to search full-text content at a high speed and with versatility (Dinkelman and Stacey-Bates (2007). Nfila (2008) ascertained that the library could integrate this content into the LMS by providing links to relevant e-Books. This is a great advantage to e-Learners.

Publishers have started to make textbooks available as e-Books (Nfila, 2008) and this helps academic libraries in supporting e-Learning. This means that librarians have to work closely with the academic staff so that they learn from them the appropriate e-Books to be used by students. Since many e-Learners can only access the library online, it means that academic libraries should utilise this opportunity to purchase e-book types of e-textbooks. Hallam (2012) argues that any student is time poor and will assume that there will be textbooks in digital format as well. Consequently the library should be ahead of the student and have these already available in the collection.

Most academic library users prefer e-Resources over print materials (Johnson, Trabelsi and Tin, 2008; Lukasiewicz 2007), here e-Resources would include e-Books. A survey carried out by Ashcroft (2011) reveals that library users prefer to use e-Books over print books. According to Hallam (2012) e-Books allow a "more social form of study Groups and students can work together on reading, annotating and comparing one or more texts on the same topic." Through social tools students can create layers of shared annotation and see other peers who are online and can have real-time chats about the e-book content, (Hallam 2012).

To support e-Learners, some academic libraries have begun to lend e-book readers already pre-loaded with content to library users (Lippincott 2010). For librarians to attract their users to use e-Books, they need to promote these to library users. Marketing can be done through library web pages. Ashcroft (2011) and Nfila (2008) argue that marketing e-Books is also important like all library's e-Resources.

2.7.3.3 Electronic databases

Another library's electronic resource is an electronic database. Electronic databases are organised in such a way that it is easy for the user to search and retrieve information in a database. They are available online, mostly via the internet. Academic libraries subscribe to database vendors for their users in order to have access to scholarly information. Electronic databases can be bibliographic or full-text. Full-text database may contain the whole e-book or article. Bibliographic databases may only have citation information of a book or article, such as author name, title, publication information and page numbers and an abstract.

Electronic databases can be accessed at libraries' websites. Libraries grant 'on-campus' and/ or remote access to their users. Electronic databases are very useful to e-Learners because they are the primary source of information.

2.7.3.4 E-Reserve collections

Academic libraries also support teaching and learning by providing access to study materials such as class notes, book chapters, textbooks, articles, etc. for students. Lecturers liaise with subject librarians to place these study materials within a reserve section also known as 'Short Loans'. For digital libraries library staff digitise these materials into electronic format and make them available via the web so that remote learners are able to access the documents easily. Since these documents are available online they are called electronic reserves (e-reserves). According to Dugdale (1999) e-reserve is an electronic equivalent of the print reserve section. Dugdale (1999) argues that e-reserves increase access to remote users who have had no access to print course material.

According to Neyer (2006: 21), any discussion on library e-reserves begins with the copyright issue. Neyer (2006: 22) defines copyright as "the right to make and distribute copies of an original work." Academic libraries are faced with the challenge of delivering a service without breaking copyright. It may be necessary to digitise publications that need copyright clearance. Many academic libraries are using the SHERPA RoMEO website (http://www.**sherpa**.ac.uk) to establish whether a publication is granted copyright clearance.

2.7.3.5 e-Reference services

Reference librarians provide electronic reference (e-Reference) services to library users. e-Reference services, sometimes called virtual reference services, offer help when users experience difficulties when, for example, doing searches on the library's resources. They make the research process easier for the researchers and give guidance to students when doing their assignments by directing them to the relevant information sources they can use. Sharifabadi (2006) states that reference librarians act as additional resources when they provide their expertise by helping users understand library systems and electronic resources and helping them with their research.

e-Reference services had previously been conducted through the email system to remote users (Sharifabadi 2006), but email, according to Lukasiewicz (2007), is not fast enough for today's generation. Students demand a much faster reference service. Lukasiewicz (2007) suggests that libraries explore the use of virtual reference software available on the market. According to Lukasiwicz (2007); virtual reference software provides faster and more reliable reference services to users, but these have proved to be very expensive and as a result not many libraries are using them.

The advent of the chat technology emerged as an answer to libraries that cannot afford virtual reference software. Chat technology is a very easy and quick method for libraries to have online chats with their users. Chat technology lets librarians and e-Learners send instant messages. Aqil, Ahmad and Siddique (2011) state that libraries use instant messaging (IM), which is known as synchronous messaging, and this method allows real time communication. Librarians have adopted these free online chat services and are able to assist users with their queries in real time. The format for these free commercial chat services available on the market make library users feel comfortable when having chats with their librarians, (Sharifabadi 2006).

By providing reference services to users, librarians are able to identify the users' information needs and can also identify specific training needs (Nfila 2008).

2.7.4 Digital video and audio products

Digital video and audio products provide streamed audio and video services for libraries. These multimedia products help libraries to reach out to their users. Each of these is described in more detail below.

2.7.4.1 Digital video

Libraries are now communicating to users in a new way by creating digital videos for marketing library services, announcements, instructional screen casts, library tours, tutorials and more. Digital videos let libraries communicate with their users. This allows library users to learn everything they need to know about the library at their convenience and they are able to watch the videos whenever they wish. They can even download these into their own devices for offline use/ viewing.

Video streaming services allow libraries to create streaming video content and broadcast it into the internet, (Robinson, 2010:1). The library can have these videos on their websites for the users to access. They can also use free multimedia services like YouTube and Flickr for access to the videos, (Bates,2011). Library videos can be embedded into social media tools such as blogs. According to Robinson (2010: 105) through blogging services, libraries can also have platforms where users can leave comments about the video.

2.7.4.2 Digital audio

Academic libraries are now creating downloadable audio content and distribute these over the internet for library users. This initiative is very helpful to e-Learners because they are

able to listen to any information they need. There are many formats that are being used for distributing digital audio over the internet, but the latest and more popular format being exploited by academic libraries are podcasts. De Sarkar describes podcasts as “a series of digital audio files (voice recordings), distributed over the internet, released with episodes and downloaded through web syndication.” Podcast technology is used by academic libraries to support e-Learning, teaching and research. (Nfila 2008). According to Nfila (2008) podcasts can be used to create and disseminate information services and resources to e-Learners, academics and researchers via the internet.

Podcast files are released via pod catchers and can be downloaded to computers, MP3 players or any mobile device, and be used offline (de Sarkar, 2012). According to de Sarkar (2012) podcast is one of the Web 2.0 tools used by libraries to reach out to users remotely. Berk et al (2007) denotes that the use of podcasts has improved collaboration and communication among learners, academics and librarians. Libraries can use podcasts to market library services and all their collections. Marketing can include library orientation, news, announcements of any events taking place in the university or at the library, information literacy programmes.

Podcast service providers have the ability to create RSS feeds that enable the automatic download of news to mobile devices, (Berk et al 2007).

2.7.5 Information literacy training

Academic librarians always conduct information literacy programmes or training programmes to teach academics and students how to find information in the library. Helping library users to use resources through organised training programmes has always been one of the core services of academic librarians (Gruca 2010). According to Gruca (2010), information literacy programmes play a major role especially for new library users by familiarising them with the library. Users get reliable knowledge about library services, collections and using the catalogue from a reputable source – the librarian.

Today these training sessions are performed in an online environment in order to also reach remote students. Online training is a modern method of library training and is becoming more popular. This form of training is aligned with providing a digital library service.

Librarians conduct online classes or electronic tutorials (e-tutorials) (Nfila, 2008) on strategies that can be used by students to improve their research or studies. Information literacy programmes help students and academics find scholarly material that will help

towards their research studies. According to Wang and Hwang (2004) the information literacy programmes must match the students' and academics' needs and assist them towards constructing knowledge maps through the use of the library.

Academic libraries are exploring the use of podcasts (refer to section 2.5.7 above) to deliver information literacy and e-Learning training material. According to Nfila (2008) academic libraries can use podcasts for information literacy programmes and deliver tutorials on information search strategies, referencing or citation styles and plagiarism. Berk et al (2007) stated that creating podcasts series is not expensive and producing these is very simple which libraries can use with ease.

According to Johnson, Trabelsi and Tin (2008), academic libraries provide instruction to their e-Learners through their web pages by making library information available online. Academic libraries also put online library and research guides on their web pages for users to get more information on the use of electronic resources. Online guides are very useful especially when introducing new electronic resources in the library. For example when the library buys a new database, the library will provide a guide for users on how to use and access this new addition.

2.7.6 Learning Commons

Academic libraries are each creating learning commons to integrate library services into e-Learning (Nfila 2008). Nfila (2008) argues further that a learning commons brings multiple services into one service. A learning commons allows an academic library to provide more cohesive services to library users. Holmgren (2010) and Heitsch and Holley (2011) state that academic libraries create learning commons to house a range of academic services such as technology support, subject area tutoring, information literacy, group study rooms, multimedia bays, casual lounge settings, reference services and research help.

According to Holmgren (2010), learning commons serves as a central point in the library. Nevertheless, e-Learning will need to have a virtual learning commons which build a participatory learning community (Xingjun, 2008). In the virtual learning commons, information can flow not just from the academics in class to their learners as in the traditional approach but also to a multiple direction which could be amongst students, from students to classroom teacher and vice versa, from students to librarian and academic and from librarian to both students and academics. Holmgren (2010) argues further that the learning commons offers a chance to change the role of the library from being the information provider to a

learning facilitator. Learning commons increase access to e-Resources and allow e-Learners to conduct classes at their convenience. Libraries provide space and relevant equipment to e-Learners to do research, assignments, online group discussions and attend their classes.

2.7.7 Digital Repositories

A digital repository gives access to a collection of digital resources. Digital repositories manage and store digital content. Libraries convert materials from analogue format to digital format, or they may be born digital, for the purpose of preserving these for a long term period, (Reese and Banerjee 2008: 1). The main goals of a digital repository are (a) continued access and preservation to library collections and (b) teaching and learning resource creation (Dhiman (2012). Libraries are also digitising their content in order to support e-Learning.

Nfila (2008) argues that digitised resources provide seamless access to multimedia resources such as images, pictures, sound, and information. Libraries are digitising their collections and have these available on the internet to support e-Learning. Fragile and specialized material that is not easily accessible can also be digitised for access. Digitising collections improves access to information and library users are able to access the library, (Nfila, 2008). Reese and Banerjee, 2008: 6) state that digital repositories offer libraries a chance to make their unique and specialised collections available to anyone.

Many libraries have implemented institutional repositories as part of their digital repositories. More detail regarding repositories is provided below.

2.7.7.1 Institutional repositories

An institutional repository (IR) is described by Dhiman (2012) as a service offered by a university to its community members for the management and dissemination of digital materials created by the members of that particular institution. An IR may include electronic documents like theses and dissertations, research papers, journal articles, patents, project reports, and previous exam papers. Individual institutions decide what goes into an IR, the decision is based on the university policies. Dhiman (2012) states that "*IR is a contemporary concept that captures and makes available as much of institutional research output as possible to the users*." Academic institutions are seen as the primary producers of research, and are expected to capture and preserve their intellectual property. IRs play a major role in fulfilling that (Dhiman 2012 and Nfila, 2008).

The role of IRs is to collect and preserve digital research output of an institution and make this freely available on the internet and is hosted within the institution (Jain 2012 and Dhiman 2012). Nevertheless, this repository cannot preserve the content of the collected information. According to Dhiman (2012) an IR is one of the "components of an e-Learning service where institution displays its worthwhile research programmes, projects, and initiatives to the broad spectrum of its users." According to Dhiman (2012) IR offers seamless access to the past and present research documents of an institution.

Jain (2012) argues that IRs allow scholars to publish their articles in journals they prefer and provide free access to these (only when allowed by the publisher!). According to Jain (2012) IRs are "widely seen as the fastest route to open access for the widest range of scholarly and research literature." IRs promote the sharing of knowledge resources which encourages collaboration. Dhiman (2012) argues that an institution that shares its knowledge resources improves knowledge generation and scholarly communication and this increases the institution's research visibility worldwide. Jain (2012) and Dhiman (2012) denote that IRs serve as archives for researchers' work and if and when a researcher needs to access his work, it will be easy for him or her and this work can also be useful even to future scholars or policy makers. Many digital repositories provide access to digital resources such as previous exam papers, lecture notes and public speeches and these can be accessed easily by e-Learners at their convenience.

2.7.7.2 Electronic Theses and Dissertations

Electronic theses and dissertations, also known as ETDs, are defined by Weisser and Walker (1997) as theses and dissertations that are submitted and archived, in electronic formats and accessed through the internet. Academic libraries are now digitising their institutional research output for the purpose of access and preservation. Dhiman (2012) stated that two of the responsibilities of libraries are to preserve information and to ensure that information resources can be accessed "in working condition and authentic." This implies that the ETDs must be in a manner that can be accessed and its authenticity can be verifiable.

Weisser and Walker (1997) argue that digitising theses and dissertations make access and distribution faster and less expensive for most researchers and scholars. ETDs have helped libraries to make their university's research more readily available to e-Learners, researchers and scholars by allowing quick search and retrieve capabilities.

Academic libraries allow their researchers and scholars, including e-Learners, to submit their theses and dissertations electronically. This process makes it easier and faster for any researcher to have his or her work available online.

2.7.8 The Web 2.0 Tools

Gruca (2010) states that Web 2.0 tools promote knowledge sharing and co-operation in learning groups which enhances the process of education. According to Gruca (2010), e-Learning is associated with social constructivism and Web 2.0. Web 2.0 tools are often used to improve library services and make the services more interactive. According to Nfila (2008), academic libraries can use Web 2.0 technologies such as audio-visuals technologies to manage multimedia and allow students to actively participate in learning through social interactions. e-Learners can use these tools to access and download learning information.

Aqil, Ahmad and Siddique (2011) argue that Web 2.0 technologies are improving the quality of library services and increasing the participation of users in various library functions like reference services, collection development, current awareness and information retrieval.

2.8 Conclusion

From the above review of related literature, it is obvious that library services are essential for the success of e-Learning. These services are therefore essential for the success of both students and academics in achieving their aspirations. In order for this to be achieved the services being provided by librarians were considered to be essential for the successful functioning of the library. The review was nevertheless divided into three different sections where they comprised a particular facet relating to the e-Learning initiative. The first section was essentially on the concept of e-Learning with a considerable look at their merits and demerits. The section ends by examining some of the contemporary extensions of e-Learning within the limits of M-learning, mobile library services and MOOCs. The second section predominantly dealt with issues of mutual inclusivity between e-Learning and the library. It further argues for the digitalisation of libraries and links it to the e-Learning initiative and finally the last section of this review illuminated the existing library support service. The next section of the report will focus on the research methodology which will be chapter three.

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1 Introduction

The essence of research methodology, for an empirical study, cannot be ignored as this provides the rigour behind the findings that underpin the research outcome. For this reason this chapter focusses on the methodology that the researcher used to achieve the objectives of the study. The main objective of the study was to identify the essential library products and services that could be embedded to support and enhance the e-Learning initiative at UNIZULU. The objectives were also aimed at understanding the implications for the UNIZULU library when embedding services in the e-Learning environment. The final objective was to benchmark these embedded library services at UNIZULU against those provided by selected libraries within KZN.

The research design for the study was situated within the interpretivist paradigm and used a qualitative approach. In an attempt to meet the research objectives, the case study method was used to carry out the investigation. The study was specifically a benchmark study. The reason for this was because the embedded services at the UNIZULU library were being compared with those provided at other libraries with similar status and expectations within the province. The reason for this is that the study is aimed at exploring how these support services were being rendered by the selected libraries within the province of KZN and therefore, more than a single university's library was necessary for the study.

This is also supported by literature which indicates that university libraries within KZN are oriented towards online learning with a variety of services being rendered in support of e-Learning (Evans and Mutula, 2014). Nonetheless, the chapter goes further to provide a brief description of the responsibilities of librarians involved with e-Learning within the province. The chapter further presents a comprehensive explanation of the data collection instruments, the process of data analysis and trustworthiness of the research. Finally, the chapter concludes with the ethical considerations of this research.

3.2 Research design

Research is the process where a researcher collects, analyses and interprets data or information to get a clear understanding of the problem being investigated (Leedy and Ormrod, 2010). In order to be able to conduct insightful research, it is obligatory to have a

working plan of the overall research design - in a manner that the researcher is able to provide answers to the research questions (Leedy and Ormrod, 2010:3). This work plan is also known as the research methodology.

According to Mouton (2001) research methodology is the systematic, methodological and accurate execution of the research design where various methods and tools are used to perform different tasks. Research design also provides the rationale for how the researcher will proceed at each stage of the research. Consequently, for any project there must be a research design that is carefully tailored to the requirements of the research question(s) (Bless and Higson-Smith, 2000).

Every study uses its own research design and this is subject to the nature of the study. For this reason, the selection of a research design is crucial and it determines the outcomes of the research project (Leedy and Ormrod, 2010). The choice in many instances could be determined by but not limited to; the scope, purpose, aims, objectives, tools and activities of an individual study. To best position the research design, this section starts by discussing the paradigm for the study which is the interpretivist paradigm. This paradigm is discussed in detail in section 3.2.1 below. Other options available are the positivist and the critical paradigms. The interpretivist paradigm was chosen because the researcher was interested in understanding, from the perspective of the librarians and staff of UNIZULU, whether the UNIZULU library is able to effectively support e-Learning services. Their collective opinion was then benchmarked against that of their counterparts within KZN.

Within the interpretivist paradigm, the study employed a qualitative research approach rather than a quantitative approach as has been mentioned and justified in chapter one section 1.8. The approach is further discussed in detail in section 3.2.2. This qualitative study was concerned with a descriptive understanding of how librarians provide e-Learning embedded services to students and academics.

In order to have a good understanding of the services provided by librarians within ISIZULU, a case study was used as the research method which was essentially considered because the embedded e-Learning services could then be benchmarked with those of other libraries within KZN. This approach is discussed in detail in section 3.2.3 below.

3.2.1 Interpretive paradigm

Different paradigms are different ways or perspectives of viewing the world; Neuman (2006: 81) defines a paradigm as a basic orientation to theory and research. In other words, a

paradigm is considered a broad framework within which researchers conduct studies. Each paradigm will include basic assumptions, important questions to be answered by the researcher and the research techniques to be used within the paradigm, which must correspond with the paradigm chosen for the study.

The interpretive research paradigm was used for this study. To begin with, the interpretivists are concerned with meanings and attempt to understand daily phenomena through the meanings that people assign to them within their social context (Henning, 2005). Therefore, individuals within the interpretivist paradigm are considered to be consciously, socially, politically and historically active in constructing meaning in the world around them. According to Cohen, Manion & Morrison (2007: 21) the "central endeavour for an interpretivist is to understand the subjective world of human experience", to get inside a person, to understand them from within and to comprehend the interpretations of the world around individuals. From this perspective, the subjective interpretation of the participants' reality in this study will provide insight into how they understand their service (the librarians) and likewise the expectations (the academics) of the other set of participants. An analysis of these two views in using the embedded e-Learning services will thus provide an answer as to whether the UNIZULU library is able to support e-Learning services or not. This view was enhanced by the benchmark against other academic libraries within KZN.

The interpretive paradigm does not concern itself with the search of broadly applicable laws as the positivist would do but would concern itself with descriptive analyses that emphasise deep, interpretive understanding of social phenomena (Henning, 2005; Leedy and Ormrod, 2010). This paradigm therefore definitely had an influence on the way the data provided by the participants were analysed and presented. Furthermore from an ontological perspective, the interpretivist paradigm does not accept the notion of an objective reality independent of the perception of reference of the participant, rather reality is considered to be dependent and influenced by the process of social interaction (Henning, 2005). For this reason, interviews as a method of data collection were of vital importance to the researcher rather than the administration of questionnaires as would have been done by the positivist. Additionally, the interpretive paradigm focuses on multiple perspectives of all the participants' reality within the social setting under the auspices of the rendering of library embedded services by librarians and likewise the usage of these services by academics. The interpretive paradigm is well suited for giving participants a voice from their subjective perspective of how reality is being understood and interpreted by them.

The broad characteristics of the interpretive paradigm are directly related to the focus of the study. The relationship is established where the researcher attempts to explore the e-

Learning embedded services that librarians provide to academics with a view of improving the process of teaching and learning. Specifically, the study investigated the types of e-Learning embedded services that each university provides within the province of KZN. This broad purpose of the study makes it suitable to frame the study within the interpretive paradigm.

3.2.2 Qualitative approach

In order to answer the research questions, the researcher employed a qualitative research approach which explores the richness, depth, and complexity of phenomena and it is associated with interpretivist paradigms in which the main indicator of meaning is experience (Henning, 2005). Merriam (1998) suggested that qualitative research should take place in the participants' natural settings, which are the offices of the participants in this case, with the intention that the data obtained would be as realistic as possible. For this reason the researcher decided to pay a visit to each of the participants while they were in their offices within the university premises. UNIZULU librarians and academics were visited in their respective offices and for other universities' librarians, the researcher paid these a visit to their respective libraries. Qualitative research was employed to describe, understand and explain e-Learning embedded services. According to Henning, (2005) this is carried out using evidence from the participants' interpretations of their subjective reality.

Qualitative research avoids large numbers unlike quantitative research but rather opts to utilise small numbers that effectively interpret social realities (Bless, Higson-Smith and Sithole (2013). Qualitative researchers believe that, the way of knowing reality (epistemology) is by exploring the experiences of others regarding a specific phenomenon and is an attempt to understand how others have constructed reality through interrogation (Maree, 2007; Leedy and Ormrod, 2010). Although qualitative research is very helpful when describing, explaining and analysing social realities that notwithstanding, the researcher must be aware that participants bring different life experiences and understanding into the research situation (Bless and Higson-Smith, 2000; Newby, 2010). Therefore, there are certain to be multiple realities, as a result of the subjective construction of each participant's nature of reality. Essack (2011) argues that such nuanced understanding of participants' realities cannot be captured through quantitative research. Since the researcher intends to explore the provision of library embedded services and the expectations of the academics therefore, there is a need for the research to be qualitative.

Although there are many appropriate and reliable methods of data collection in qualitative research the researcher decided to use interviews as the sole method of data collection; whereby, there is much text and where data collected are in the form of words.

3.2.3 Case study as the research methodology

Rule and John (2011) define case study as a systematic and in-depth investigation of a particular instance in its context in order to generate knowledge. Stake (2000) demarcates three types of case studies which include: intrinsic, instrumental and collective case studies. Intrinsic case studies focus on unusual cases with particular interest to the researcher with the intention to build a theory. Whereas, an instrumental case study is used so as to provide insight about a phenomenon so that the findings could be generalised to help provide an understanding –this is more appropriate with a quantitative study. And finally, the comparative case study encompasses more than one case in order to investigate a seemingly general condition for the purpose of the study, the case was UNIZULU and was comparatively benchmarked with other universities within KZN universities.

Denzin and Lincoln (2000) state that the advantage of the case study is that it presents a real life situation and provides a holistic account of participants' realities and an insight that would enable the reader to visualise the experiences of the people in the phenomenon. Also, the in-depth nature of case study gives a unique perspective on the phenomena of the e-Learning initiative that may be lost in larger scale research projects such as surveys (Bless and Higson-Smith, 2000; Rule and John, 2011).

In order to explore the library embedded services at UNIZULU, the researcher used a case study approach to carry out the investigation. Rule and John (2011) define case study as a systematic and in-depth investigation of a particular instance in its context in order to generate knowledge. The rendering of e-Learning services by librarians and the expectations of academics at UNIZULU was considered as a case study. Cohen, Manion & Morrison, (2007) argue that a case study probes deeply into a phenomenon (e-Learning embedded services) and analyses intensively the multifarious phenomena that constitute the nature and or concept of the unit being investigated - UNIZULU. In this research, the case study was then compared with two selected libraries within the province of KZN. Although Cohen, Manion & Morrison, (2007) noted that case studies are conducted in specific temporal, geographic and institutional contexts, it was seen as necessary to compare the case with other institutions with a similar challenge.

3.3 Target population

Population also termed universe is defined by Neuman (2006: 224) as "a large pool of cases or elements, such as persons, groups of people, organisations, written documents, symbolic messages, or even the social actions under investigation." The target population is a specified large group of cases where a researcher draws a sample and where he/she generalises the results (Neuman (2006: 224).

In this study, the primary population was seen as the librarians and academics affiliated with UNIZULU, University of KwaZulu-Natal (UKZN) and Durban University of Technology (DUT). The sample was drawn from librarians involved in e-Learning as well as only those academics who make use of such services. All three institutions are described in more detail below as part of the background information to the study.

All three universities selected for the study are located within the province of KZN.

UNIZULU, being the host institution for the study, has two campuses and with the main campus located at KwaDlangezwa. The university has only one library that serves the need for students and academics of the two campuses. The university has a total student enrolment of approximately 16,700 learners from five faculties. The library has six Subject Librarians to serve the needs of both academics and students who are positioned at strategic corners in the library open enough to be easily seen by all the library users. Although the library has Subject Librarians none of the current staff is responsible for rendering e-Learning embedded services to those who wish to use them. This seems to suggest that the library does not have human capacity with respect to the staff availability to support the e-Learning services that are currently being executed in their classrooms (Evans and Mutula 2014).

UKZN have a student enrolment of approximately 49,000 students across four different campuses. These campuses could be found in (1) Pinetown, (2) Westville, (3) Durban and (4) Pietermaritzburg. Each of these campuses has a campus based library that serves the needs of their academics and students respectively. UKZN has a total of 28 Subject Librarians distributed within the five campuses, but there is also no staff dedicated to provide embedded services for e-Learning at the institution.

With respect to **DUT**, the institution has a student enrolment of approximately 22,500 learners from six different campuses located within Durban and Pietermaritzburg. Each of these campuses also has a library to support the needs for their academics and students. The library has a staff capacity of 14 Subject Librarians also distributed within the institutions' six campuses. They also have Subject Librarians but there is no one responsible

for rendering the particular services of e-Learning to the needs of their student both on and off campus (http://www.dut.ac.za/)

Since there is no one responsible for e-Learning at any of the three selected institutions the Subject Librarians seem to be the only ones dealing with the embedded services required by the teaching, learning and research community of the respective institutions. Although there is a structure in place for Inter-Library Loans and exchange of resources these are only limited to physical resources and insignificantly little is done concerning e-Learning among the three universities. Therefore they work in isolation from each other.

3.4 Sampling of participants

A sample is a well-defined population used for a study (Leedy and Ormrod, 2010) Bless and Higson-Smith (2000: 85) state that sampling is the set of elements on which the researcher focuses and where he can obtain results. Neuman (2006: 219) further states that sampling happens when sample cases are selected from a larger pool. This pool implies that anyone qualifies to be part of the study or selected population for the study. Sometimes it becomes difficult to use the entire pool for a study or research. Therefore, Sarantakos, (2007:139) argues that sampling enables the researcher to study a relatively small number of units that represent the entire population. From this perspective, a sample represents each and every factor that needs to be studied. This represented section is known as the representative sample (Henning, 2005). Some of the reasons to consider representative sampling, although not limited to it, could be aspects such as cost and time. This sometimes makes it impossible to include the entire population in the study. As a result the researcher selects a smaller subset of the population to represent the entire population. The main purpose of sampling is to collect more information on actions, events, cases or experiences that can help the researcher get clear understanding of the answers to the problem being researched (Neuman 2006: 219). For the purposes of this study the purposive sampling method was used to identify the sample population.

3.4.1 Purposive sampling

In the purposive sampling method, the researcher is able to choose the respondents in accordance with stated criteria (Leedy and Ormrod, 2010) According to Bless, Higson-Smith and Sithole (2013: 172) purposive sampling is based on the judgement of the researcher. The researcher chooses a sample based on what she or he considers to be typical units to carry out the study. According to Bless, Higson-Smith and Sithole (2013: 172), the strategy

in a sample is to select units that are common in the population being investigated. This sampling technique is likewise referred to as a non-probability sampling technique.

The reason for selecting this sampling technique was because the researcher wants the relevant staff members at UNIZULU whose job description is related to rendering the required e-Learning embedded services needed by users of the digital library. This criterion was therefore the reason for not selecting everyone who works at the library of UNIZULU. Furthermore, the selected academics at UNIZULU were associated with the teaching method that showed sufficient signs that they needed and to some extent relied on e-Learning for the effectiveness and efficiency of their teaching.

This also made the choice of selection of academics purposive with respect to sampling. The underpinning assumption was therefore that the academics would be able to tell their needs and expectations to best use the products and services from the library.

The librarians from the other universities were being considered by the researcher mainly because their opinion would be of importance to the services that should be rendered or perhaps must be rendered to meet the needs of the academics and students of the UNIZULU community. Also all the non-UNIZULU participants were already rendering or were in need of the e-Learning embedded services at the time of the study.

3.4.2 Sample size

It is very important to determine the size of the sample. This is a qualitative study and the sample size selected was considered sufficient because as recommended by Bless, Higson-Smith and Sithole (2013: 174) it determined the level of reliability of research findings through the representation of the participants. That notwithstanding, the researcher acknowledges that a larger sample would have been more representative for the study but this would have been more expensive and time consuming in collecting the data thus limiting the study. On the other hand, the small sample was more convenient and sufficient enough to provide valid findings.

	Selected University	Sample (Librarians)	Sample (Academics)
	DUT	3	N/A
	UKZN	3	N/A
	UNIZULU	3	3
Total participants		**12**	

Table 1: Sampling frame

The above table shows the total number of participants of the study. The reason for having more participants from UNIZULU was because the researcher's primary interest is to have an in-depth understanding of the e-Learning embedded services being rendered at the university whilst the other institutions served the purpose of comparing or benchmarking their support service to that of UNIZULU. Three librarians and three academics from UNIZULU took part in the study from different subject specialisations. The use of only three academics from UNIZULU was partly influenced by their willingness to participate in the study. The low level of computer literacy was given as the main reason for the refusal of more academics to participate in the study. Most of the academics at UNIZULU appear to be reluctant to use the blended services provided by the library. Therefore the three participants selected were chosen because they regularly use the library services and their data were deemed relevant and insightful to the study compared to their colleagues who were not conversant with library services.

3.5 Data collection

Researchers collect data by using various techniques. The choice of a particular technique depends on the type of question or problem being investigated and the type of information being sought. Bless, Higson-Smith and Sithole (2013) and Leedy and Ormrod (2010) list three major instruments for gathering qualitative information from participants and these are interviews, questionnaires, and observations.

For the purpose of this study interviews were used for collecting data. A digital audio recorder was used to record all conversations between the interviewer and the respondents. This was done with the permission of the participants.

3.5.1 The interview as an instrument for the study

The use of an interview as method of data collection was considered to be the most appropriate for the study. Neuman, (2006: 304) argues that the interview is an interaction

between two individuals where one person, the interviewer, wants to obtain specific information from the other, the interviewee. Fraenkel and Wallen (2008) argue that interviews are designs that favour in-depth information in a narrative form and allow for very detailed and descriptive information to be collected in the form of words. Through a qualitative approach a detailed transcript of an interview will permit the researcher to identify themes and as a result, the researcher is able to understand and portray the participants' perceptions and understanding of the particular research inquiry. One of the advantages of qualitative research is that it allows for the use of non-interfering data collection techniques, where the researcher can capture the natural flow of events and hear how participants interpret these events from their subjective perspectives.

The main aim of the interview is to gather accurate and in-depth data directly from respondents. According to Bless and Higson-Smith (2000: 105) the interview is an established data collection instrument for qualitative research and for a case study. This type of research data collection is often a preferred option since most researchers feel comfortable with it (King and Horrocks, 2010: 6). The interviewer is in control of the interview rate and interviewees are encouraged to talk about their views, feelings and perceptions on a given topic or situation. In contrast to when using a questionnaire both the interviewer and the interviewee could ask for clarification when an aspect is not understood. Similarly the interviewee could be asked to elaborate when particularly useful information is shared.

Gray (2009: 373) states that there are five types of interviews. These are: focused interviews; structured interviews; semi-structured interviews; informal conversational interviews and non-directive interviews. Gray (2009: 373) argues that the choice of a particular method depends on the aims and objectives of the research being conducted. For this study, the semi-structured interview method was chosen. This was meant to give the participants' the freedom to freely express themselves when a question was being asked. This form of interview accounted for the depth of the data.

3.5.1.1 Some of the advantages experienced using Interviews

The primary advantage the researcher experienced using interviews is that the respondents provide much more detailed information. According to Neuman (2006: 301) and Leedy and Ormrod, (2010: 188), interviews have the highest response rates. Interviews could provide a more relaxed atmosphere in which to collect information from the respondent. Both the interviewer and interviewee may feel more comfortable having a conversation about a given topic. Additionally, face-to-face interviews enable the researcher to establish rapport with potential respondents and this leads to positive cooperation of the respondent (Henning, 2005; Leedy and Ormrod, 2010: 188).

3.5.1.2 Some of the disadvantages experienced using Interviews

There were two distinct disadvantages conducting interviews of this scale of study that the researcher experienced. Interviews are time consuming and very expensive to administer and transcribe (Bless, Higson-Smith and Sithole, (2013: 198), Leedy and Ormrod, (2010: 188), Neuman (2006: 301) and Kruger and Wellman, (2001: 160).

- **Time consuming**

  The researcher spends a considerable period of time arranging for the interview (that must suit both the respondent and the researcher) (Kruger and Wellman, 2001: 160). This was also experienced during the process of data collection with many appointments being changed due to commitment on one thing or the other. Bless and Higson-Smith (2000: 109) argue that these problems could result in a small sample.

  Again, interviews are time intensive because the interviewer (researcher) needs to be physically present with each interview; this is nonetheless limited to face-to-face interview only. The interviewer spends a number of hours interviewing one respondent and sometimes the interviewer has to travel long distances to reach the respondent. Sometimes the interview may not take place at the scheduled time or day because of various reasons and the interviewer may have to return for the second time or even the third time if there are cancellations. With respect to this study, the researcher did make more than one visit to some of the participants and some of them accepted a follow-up conversation over the telephone. Interestingly enough, all the participants from the other institutions accepted the option to continue the follow-up telephonically. In addition transcribing the interview is equally laborious. Transcription needs to take place before the results could be analysed.

- **Expensive**

  There are also cost implications for interview methods as travelling and accommodation costs amount to considerable expenses, (Kruger and Wellman, 2001: 160). This is one of the main reasons why the researcher wanted and preferred a follow-up interview session telephonically. Bless, and Higson-Smith (2000: 108) adds that the quality and wealth of data collected during interviews depends on how skilled the interviewer is and how confident respondents are. If the interviewer does not ask leading questions, or probes or cannot tell when the respondent is unclear, or if s/he has poor listening skills then the interview might not give quality or rich data. It is imperative for the researcher to be able to structure his/her questions well and be able to interpret the answers. Also non-competent interviewers may introduce bias.

- **Requires some expertise**

  Moreover, interviewing requires skills and patience - to be able to probe deeply into the respondents' answer. Sometime, responses to open-ended questions were complex to comprehend and comparing their meaning is very difficult because some respondents used their own terminology and jargon when answering questions and the meaning was not exactly the same from the researcher's perspective.

3.5.2 Semi-structured interviews

Semi-structured interviews with open-ended questions seemed to be best suited to answer the main research questions introduced in chapter one. The researcher used semi-structured interviews as an interview technique to collect data because she assumed that the librarians and academics would be able to provide relevant data for this research. The researcher, also, chose the semi-structured interviews because of their malleability and it gave the researcher an option to probe deeper into further questions that seem to be of relevance to the study and needed further explanation.

The researcher could have used other interview techniques such as structured and focus group interviews but they could not have been either appropriate or possible for the study because the structured interview would not have yielded the in-depth data that the researcher wanted. Similarly the focus group interview was not practically possible since the librarians were not all from the same university and even when they were from the same university such as UNIZULU, this was still not possible because the interview was during working hours and so time was only enough for face-to-face interviews compared to gathering all the staff at the library for a group interview. Nonetheless, the face-to-face interview was sufficient for the data that was needed for the study. Neuman (2006:301) and Leedy and Ormrod (2010: 188) state that interviews can be conducted in various ways including face-to-face interactions and telephone discussions. For this study face-to-face interviews were conducted. With this type of interview the researcher is able to clarify any unclear question and was also able to read and record the respondents' reactions.

To accomplish this she had to prepare a list of interview questions (see appendices A, B and C) to be answered by the participants. Most of the questions were open-ended and the participants could answer as they wanted. Kruger and Welman (2001: 161) argued that although all respondents are asked the same questions, the interviewer may formulate other questions as probes or further explanation due to a given situation. Semi-structured interview questions can be adjusted to meet the level of the respondent and level of his/ her knowledge of the problem (Neuman, 2011:407).

3.5.2.1 Some of the advantages of Semi-structured interviews

The flexibility of semi-structured interviews gives the researcher several advantages.

- Semi-structured interviews allow the researcher to ask for further views and opinions from the respondent if and when there is a need for the respondent to expand or clarify his/her answers (Leedy and Ormrod, 2010).
- The researcher has opportunities to probe for views and opinions of the respondent and go deeper into a given situation. This was exactly the advantage that the researcher took during her interview process with the participants. The researcher can even explain, elaborate or rephrase the questions if the respondent needs clarification Leedy and Ormrod, 2010).
- Semi-structured interview questions can be adjusted to meet the level of the respondent and level of his/ her knowledge of the problem (Neuman, 2011:407).
- The researcher can also get a chance to explore new paths which were not initially considered. Leedy and Ormrod, (2010: 188) ascertain that the order in which the questions have been structured may change if the direction of the interview changes.

3.5.2.2 Some of the disadvantages of Semi-structured interviews

- Semi-structured interviews require competent skills from the interviewer. For example the interviewer needs to be able to formulate probing questions in case the main question was not answered in sufficient detail (Leedy and Ormrod, 2010)
- Responses may be very complex and may also be difficult to compare their meaning because of the language or words used by respondents (Bless, Higson-Smith (2000: 106).
- The collection of data critically depends on how competent the transcriber is, this means that from the process of interviews it is very important that all the information is clear and understood from all parties involved, so that during the transcription process there are no problems (Leedy and Ormrod (2010).

3.6 Ethical considerations

Research ethics are very important when one is conducting research study. Research ethics help in preventing abuse of research and help the researcher to understand his or her responsibilities in the research undertaken (Bless, Higson-Smith and Sithole (2013: 28). The researcher has to abide by the codes of research ethics by allowing the participant the opportunity to understand what the research is about. The participant needs to give informed consent prior to participating in the interview. Bless, Higson-Smith and Sithole (2013: 28)

argue further that ethics in research emphasises sensitive humane treatment of the participants. Respondents need to be fully informed about the research for which they will be interviewed. A copy of the informed consent can be seen in appendix D, approved by the Committee for Research Ethics and Integrity of the University of Pretoria, Faculty of Engineering, Built Environment and Information Technology (EBIT) was signed by all the respondents taking part in this research.

Respondents need to know what will happen with the information they will give and need to be assured that their privacy will be protected and this was assured by the researcher and the information will be kept for at least five years before being destroyed.

Moreover, the rights of the participants must be made known to them and they were also told that they can withdraw their participation at any time within the process if they feel uncomfortable to continue. Therefore the researcher was explicit enough to say that the participation was voluntary. Before the interview session the researcher sought the participant's permission to record the interview for the purpose of transcribing all the information collected - as was explained to the participants.

3.7 Data analysis and interpretation

The data collected had to be analysed and interpreted in such a way that it is easy for the researcher to draw conclusions and be able to make recommendations. Sarantakos (2007: 313) defines data analysis and interpretation as a process of processing data and converting it into meaningful statements. Because the researcher decided to use open-ended questions during data collection, there was a huge challenge in analysing the data. The process of analysing the data was laborious.

The process of data analysis started immediately after all the data was collected from the participants. In an attempt to answer the critical research questions, the raw data collected was coded, categorised into emerging themes in order to produce a meaningful and trustworthy conclusion that was supported by evidence as to how it was reached. Maree, (2007) states that data analysis involves working with data by organising, and breaking it into manageable units, synthesising it and, searching for patterns, discovering what is important and what is to be learned, and deciding what to tell others. The researcher first organised and presented the data analysis according to the individual librarians and academics in each of the three institutions, considering the responses of each institution's participants before proceeding to the next institution. By so doing, the coherence and integrity of each individual response was preserved and facilitated a holistic view of the case (as recommended by

Cohen, Manion & Morrison, 2007), on how institutions render e-Learning embedded services to their users. The researcher read the data line by line, and substantive codes were identified and named. The emerging issues from all the participants were then categorised, where patterns of responses, similarities and differences raised by the participants were analysed and were given different names according to their respective categories. De Vos (2002) stated that qualitative data analysis is a search for statements about relationships among categories of participants' data.

The data collected from the participants were documented and analysed in an attempt to answer the research questions. Literature was used to either confirm or dispute the findings. Lichtman, (2006) concludes that it is the role of the researcher to bring understanding, interpretation and meaning to the data; therefore, the data was analysed in an explicit and exploratory manner. However, Braun and Clarke (2006: 86), explained the nature of thematic analysis by stating that it "involves a constant moving forward and backwards between the entire data set, the coded extracts that you are analysing, and the analysis of the data that you are producing. Writing is an integral part of analysis, not something that takes place at the end as it does with statistical analyses." The process of documenting qualitative data is much more complex and time consuming. In this study, the researcher presented the findings obtained from the interviews conducted. The findings are presented and discussed in chapter four of this report.

3.8 Validity and reliability

The credibility of qualitative research lies in its validity. Willig (2001) defines validity as the extent to which the researcher describes measures and/or explains what it aims to describe or explain. The researcher used piloting to validate the interview questions before administering them to the participants. Also a follow-up with participants took place to make sure that the transcription was an accurate record of the interview (what was said was actually what was understood and transcribed by the researcher). Participants were very willing to provide clarity and the corrections were made accordingly. Furthermore, the researcher strictly adhered to the four criteria of trustworthiness for research studies, which emphasised that data should be credible, transferable, dependable and confirmable (Schwandt, 2007). This was assured by the choice of the selected participants for the study and the diligence in capturing the data collected.

Reliability refers to the dependability or consistency involved in the findings of a study. Neuman, (2006) suggests that under similar conditions and circumstance the same information of findings will still be obtained. This was ensured through the rigour of the

methodology and the purposive sampling of the participants. With respect to any form of bias in the analysis it was difficult to isolate the researcher from the research because she is working at the library and her job is related to rendering embedded services to e-Learning. Therefore it is acknowledged that it is probable that some bias could have been introduced.

3.9 Summary

This chapter dealt with the methodology used for this study. The approach adopted was qualitative within an interpretivist paradigm and the research design employed was the case study. A semi-structured interview was used as the data collection method with some of the questions being open-ended. The questions were asked bearing in mind the research objectives stated at the beginning of this chapter and in the introductory chapter. The ethical considerations were also mentioned and the issue of validity and reliability. In the next chapter, the findings will be presented and analysed.

CHAPTER FOUR

4. RESEARCH RESULTS, DATA ANALYSIS AND DISCUSSION

4.1 Introduction

This research was an exploration of the essential embedded library services that are needed to support e-Learning at UNIZULU. This was done by benchmarking the support services being rendered at two other libraries within the province of KZN against those provided at UNIZULU. The intention was to understand and identify the necessary areas of improvement. For this reason, participants were selected from three different universities within KZN.

The data collected was aimed at providing answers to the main research question which was, to asses if the UNIZULU library is able to effectively support e-Learning. The research question was further divided into three sub questions as follows; what are the essential library services to support e-Learning? Which services has UNIZULU earmarked to embed the e-Learning initiative and finally to benchmark the embedded library services at UNIZULU against those provided by selected libraries within KZN. This chapter was divided into two broad sections namely the presentation of research results and analysis, and the discussion of the findings which were presented as themes. The presentation of research data was subcategorised into two subheadings namely; (a) general knowledge about blended learning and (b) the services provided by the libraries. Finally this section also addressed suggestions and recommendations from library staff.

4.2 Respondents

For the purpose of the study, three universities were approached and three respondents were selected per institution. For ethical reasons, all data was anonymised to mask the respondents' identity; therefore all the participating institutions will be referred to as A, B and C whilst the respondents (librarians) will be 1, 2 and 3 respectively. With respect to the academics they will be referred to as a1, a2, and a3 which were all from institution C.

4.3 Presentation of research results and analysis

Three themes emerged from the analysis of the data collected. These themes were; firstly, the establishment of embedded support service for e-Learning. Three subthemes emerged from this theme. These were (i) the extent to which e-Learning was embedded into the

library support services, (ii) the commonality of the embedded support services and (iii) a variety of miscellaneous components that support e-Learning. The second theme could be linked to the administrative aspects associated with an embedded support service for e-Learning. This theme was divided into two perspectives, namely (i) those of the academics and (ii) those of the librarians. The last theme was, e-Learning and the LMS at the centre of embedded support services. Essentially, the themes look at how learning and library support services are being effected in the presence of an LMS.

In this section, a presentation of the research results and analysis has been provided. The findings are presented in the order of the research questions. The interview instruments have been made available in appendices A, B and C. Each of the following subheadings report on the data gathered during the interviews.

4.3.1 General knowledge about blended learning

When the respondents were asked what blended learning is; it was realised that all the six respondents from institutions A and B were able to identify the key components of blended learning. Their response was similar to that that found in literature as presented in section 1.10.4 and 2.2 respectively. This question was not asked to the librarians at institution C. The reason for not asking the academics the same question as the librarian was based on the first objective of the study found in section 1.6, which is mainly to identify the essential services (and products) that could be embedded to support and enhance e-Learning initiative at UNIZULU. But it appears that the term was well established in the community.

4.3.2 Services provided by libraries

Respondents were asked what services their institutions rendered. At Institution A, all Subject Librarians offer information literacy courses to the community they serve. This was done in a variety of ways such as through online, face-to-face and telephonic training. The librarians also liaise with the academics to facilitate teaching. Institutions A and B provide very similar services but at institution C respondents indicated that they rather provide awareness workshops to introduce the available services being rendered by the library. These services were similar to those being rendered by their colleagues at the other universities. None of the respondents at institution C was aware of any problems encountered by the users of library services, although they acknowledged the need for improvements. The range and variety of these services being rendered was similar to those mentioned in the literature review section (see section 2.7). These services were mostly; library guidelines (LibGuides), online tutorials, e-Resources and e-book subscriptions. Some of these services have been described in more detail in the following subsections.

4.3.2.1 Web page

Unlike the researcher's understanding of blended learning, institution A has a well-structured system where the library hosts online content of learning materials which can be accessed by the library users. This is facilitated by the presence of a LMS and through this link the library services can be accessed by users. At institution C the library services are not embedded into the LMS. As a result of this access to the library is only through the library's official webpage. The effect of such an inefficient work procedure was reported by all the academics and librarian of institution C. This, according to the academics, affected their usage of the library services. The standards of these web services reflect what was discussed in chapter two section 2.6. However, it was reported that attempts are under way to embed the library services into the LMS along with the LibGuides where subject content materials are being developed.

4.3.2.1 Ask a librarian

Institution A, which seems to be the most advanced in terms of supporting e-Learning of all the participating institutions, is at the moment working on providing an option that provides a direct online response to library user questions. This option, called "Ask a Librarian", allows for a synchronous communication between the library and all her online users. Although this is not yet a current reality at the library significant progress has been made and is currently being put in place - as indicated by respondent 1 in institution A. At institution B, there was no online 'contact with the librarian' option as such and such plans were not envisaged by the instruction. Institution B still uses webmail and/or e-Reference for communication which is what is also currently being used at institution A. Such services concur with those mentioned in literature as found in section 2.7.3.5. Such services were not reported to be envisaged at Institution C.

4.3.2.2 e-Resources: e-Books, e-Reserves/ e-Textbooks

At institution A there is evidence of a wide variety of e-Resources including e-book packages and e-newspapers. This is credited to their subscription model. These resources are made available to library users and are accessed through the library webpage. Similar resources were reported at institution C. Nevertheless, resources such as a discovery tool and an e-catalogue were newly established. There were no LibGuides present at the institution. Furthermore, the statistics show that usage is low because not all users are aware of these and were not able to use the e-Books. When asked about this the librarians speculated that the reasons could be linked to internet connectivity and not having the necessary devices that they could use to access these. There was a consensual response by all respondents of

institution C, of an ongoing improvement of the e-Resources, through staff training, purchase of e-Resources, and awareness workshop for academics and students.

4.3.3 Appreciation of services provided

In addition, the respondents at institutions A and B expressed their satisfaction in the use and importance of the products and services that were available to them. Those at institution C expressed less satisfaction in their use of the products and subsequent rendering of their services. Generally institutions A and B have more e-Resource subscriptions than institution C. Additionally, the general consensus of all the respondents at institution C was that the website was not user friendly along with the library's web page, which was the only point of electronic entry into the university's library.

4.3.3.1 How satisfaction is measured

In an attempt to measure the satisfaction with the services, the three institutions A, B and C conducted students' satisfaction surveys. This was done through online links and physically distributing questionnaires, particularly at institution A. Some problems were also identified by the students through these surveys - as they experienced difficulties in accessing the e-Resources. At institution C, although a survey was done, it was reported that the level of participation by the community affected the integrity of the findings, perhaps because it was done informally.

4.3.3.2 Students' satisfaction levels and problems encountered

With respect to the level of students' satisfaction of the services being rendered by the library, the survey results showed general satisfaction by the participating libraries' users. There were some concerns about the level of the measure being used as indicated by respondent 2 in institution B. At institution B there was a mixed response perhaps based upon the subjective opinion of individual respondents. At institution C, the level of satisfaction was at 80%. Some problems identified by the survey are usually addressed by both institutions. Problems related to navigating the website are usually addressed through training or if they are related to an academic then, a telephone call is reported for the problems to be solved. Problems related to internet connections or IT in general are directed to the people concerned with solving such problems.

4.3.4 Suggestions and recommendations from library staff

When the respondents were asked what they would advise UNIZULU to do, in designing a useful online library service they reported that, a few modules (those that require more library services) should be designed and student response should be evaluated and a team of experts should be part of the design and evaluation process. This will build a strong collaborative relationship between students, academics and librarians. This was from respondent 1 and 2 in institution A. From institution B, there was advice to regularly check on external access to e-Resources from the library. There was also advice on having the LMS embedded into the library services. The marketisation and training of librarians were also recommended by all the participants at institution B.

4.4 Discussion of findings

It needs to be taken into consideration that the development in computer technology and the availability of the internet have prompted libraries to change their approach in services delivery - as was discussed in chapter two. From the results and the analysis provided in section 4.3 above it is now possible to discuss the results according to three themes and a number of sub-themes that were identified while analysing the responses. Three themes emerged from the analysis of the data collected.

4.4.1 The establishment of embedded support service for e-Learning

The first theme relates to the establishment of embedded support service for e-Learning. Three subthemes emerged for this theme. These were (i) the extent to which e-Learning was embedded into the library support services, (ii) the commonality of the embedded support services and (iii) a variety of miscellaneous components that support e-Learning. Each of these are discussed below.

4.4.1.1 The extent to which e-Learning was embedded

Despite the fact that these librarians indicated that their e-Learning was an integral beneficiary of the various support services that they rendered to their users, they nevertheless were not at the same level of service provision across the selected universities. When a participant was asked about the library support services and if e-Learning was embedded into the library services all of the participants agreed that e-Learning was embedded into the library support services being rendered at the selected libraries.

Although all the librarians acknowledged that they were intending to embed e-Learning into their library services nevertheless they all have different levels at which it was being done. The institution B respondent 1 reported that they *were not completely dependent on e-*

Learning; they are using both the traditional method of face-to-face and e-Learning [teaching] method. This implies that they are also using blended learning and not true e-Learning which is the common situation. This is also reflected in some of the support service activities that were being done at the institution. For instance, institution B is looking into embedding all resources into the LMS. The use of the LMS by universities is not only to facilitate the process of teaching but has been considered as vital for a successful establishment of e-Learning services in literature (Boumarafi, 2008; McLean, 2003 and Nfila, 2008) as was reported in Chapter 2 section 2.6. Currently, librarians at institution B are still undergoing some training on how to use the LMS. With respect to institution A which has five campuses it seems important for the institution to have an effective e-Learning establishment, considering that the campuses are themselves far apart from each other; similar to the scenario of their e-Learners. In an attempt to understand the extent to which e-Learning was embedded into the university's library support services respondent 1 said that,

> "*We use a combination of a number of approaches of learning – which could be online or traditional. In some cases one can exist without the other but not in all subjects*."

The level of establishment at institution A indicates that the library services and products were into e-Learning and were efficient and effective enough not to be supplemented by face-to-face teaching methods. This level of proficiency in the establishment of e-Learning into the library support services was not experienced at institution B, although this was not the case with all subjects being offered at the respective institutions. Institution A also had all the necessary support services such as online library guides, information courses offered online and offline, along with ongoing e-tutorials on information literacy. All of these library support services are linked to the LMS. The reason for such an establishment of e-Learning being embedded into the library support service was thus credited to the presence of LMS that make e-Learning a success. The librarians at institution A were part of the LMS and as such they could have a direct relationship with their users which would definitely include academics and students amongst others. The review of literature made strong suggestions that library services should be linked into the e-Learning curriculum by integrating their resources and the library's resource management system into the LMS (Rieger, Horne and Revels, 2004).

At institution C, most of the librarians indicated their inability to become engaged with e-Learning and also related such an inability to the manner at which the entire e-Learning system was structured. With respect to understanding the extent to which e-Learning was established at the university, respondent 1, an experienced librarian said that,

> "*Yes I know we have e-Learning here but to be honest with you, we don't usually get involved and I can't really say what we do as part of e-Learning*."

It is be evident from the participant's comments that the establishment of e-Learning as part of the library support services at institution C, has not been well accepted within the broader framework of the institution's support services. The inability of the librarian to use the LMS at institution C, has affected their efficiency in supporting e-Learning services.

This, according to the participants, was limiting the extent to which their services could be rendered to e-Learners and other users of their library support services. The level of establishment at institution A, indicates that the library services and products are embedded into e-Learning.

4.4.1.2 The commonality of the embedded support services

The universities within KZN have different levels of establishment with respect to e-Learning which was a reflection of the presence of or absence of LMS incorporated into the library support services. There was however some of the library support service that was present in all of the libraries of these universities and was being used in the same way in all of these institutions.

The relationship between these support services to e-Learning was both direct and indirect, as they were also being used by those who were not e-Learners but who rather come to the library in person. These services and products were mainly through the web OPAC. Libraries use the web OPAC to grant their users access to all library resources - as was found in literature (Johnson, Trabelsi and Tin, 2008) and reported in section 2.7.1. Through the web OPAC, all their library resources are brought together and users were able to access both electronic and print resources of the library from one access point. These are also being accessed by e-Learners through the help of the Internet.

In addition to the OPAC, institutions all use discovery tools. The discovery tool is used for searching both the university's library catalogue and all other available e-Resources to which the university subscribes. The advantage the discovery tool has over OPAC is that, it puts together all products a library has as a single search result. The users have the benefit of doing only one search for all the products they need simultaneously rather than going from one database to the next in search of the information they need. At institution A, the discovery tool is called WorldCat local, while at institution B, it is SUMON and institution C, uses Ebsco Discovery Tool (EDS).

This integration of the discovery tool was found to be well established at institution A, where all university systems were interconnected to one another. The benefit of such an integration is that the users are able to have one point of access to the library resources rather than going to another web page to have access to the services of either of them. Respondent 3, a librarian at institution C, said that:

> "*All I have to do to get into the LMS is a click on my mouse and select the option that will direct me to the library discovery tool and the subsequent articles*."

Due to the integrated nature of the LMS and the ILS it was easy for the institution A user to easily switch from one web page to the next without necessarily going out of the library system. This was made possible because the library services were embedded into the LMS. These options were not available at institution B, or C, The absence of these services also made it difficult for e-Learning services to be rendered by the libraries at these universities.

There was also the presence of e-Resources at all the university libraries. This was an indication that libraries see the provision of information in an electronic format as one of the primary functions of libraries within the province of KZN. Therefore it is easy for e-Learners at these universities to have access to resources in an electronic format. These e-Resources were all online to be accessible through the Internet which is a condition that favours e-Learning. e-Resources include products such as e-Books, e-Journals, e-reserves, electronic theses and dissertations and digital image collections. Although the universities all have access to e-Resources in their library collections, institution C, compared toinstitutions B and C has more subscribed e-Resources available within their system. This comparison was closely followed by institution C. Furthermore, the e-research services present at institution A were also found to be well established. Such services include reference management tools and citation metrics - a system that measures how often an article is cited online. The additional availability of these e-Resources accounted for institution A, to be a better equipped place for e-Learning. Their learners could have easy access to these resources that are readily available to them online and could be downloaded onto their devices without necessarily coming to the library.

4.4.1.3 Miscellaneous components

Although these libraries have demonstrated that they are not lagging behind with respect to providing support services that would facilitate e-Learning, some technological innovations were also found to be of peripheral use in support of e-Learning. These miscellaneous components were considered to be important for e-Learners who would need the support

services of the library for their learning purposes. M-learning is considered as an extension of e-Learning which is enabled by the use of mobile computing devices communicating over wireless networks. At institution A, and institution C, it was found that they use Moodle while at institution B, they use Blackboard LMS. Considering that M-learning is a function of the LMS, the participants at institution A, indicated there was an application in the Moodle that can be downloaded onto a mobile device. For this reason institution A, was considered as rendering M-learning services. At institution C, this service could not be rendered as a library support service because the library was not incorporated into the LMS. Pertaining to institution B, which used the blackboard LMS, they were also using M-learning as a library support service although at the time of the study they were in the process of incorporating the library into the LMS. Nonetheless, through the library at the time of the study M-learning was being used. The use of these devices was therefore not institutionalised as they were dependent on the affordability of the students, academics and the librarians, although they are instrumental for e-Learning. The participants however acknowledged that some of their e-Learners were already in possession of these devices such as smart phones, IPads and tablets that cloud support the use of M-learning.

There was also the absence of Massive Open Online Courses (MOOC) which are meant to cater for the needs of e-Learners exclusively. These online courses are understood to be open to anyone in the world to take usually for free and not for credit. However the universities within the province are structured and financed differently thus none of these were offering free learning and hence no library services needed to be embedded in a MOOC yet. According to the academics of institution C and all the librarians during the time of the study there were no plans for such an initiative to be carried out.

4.4.2 Working on e-Learning as embedded support services

The second theme could be linked to the administrative aspects associated with an embedded support service for e-Learning. This theme was divided into two perspectives, namely (i) that of the academics and (ii) that of the librarians.

The support services being rendered at any library are predominantly the responsibility of the librarians and the institution to ensure their effectiveness. The manner with which these institutions handle and execute their services will determine the quality of the services being rendered to their users (Evans and Mutula 2014). With respect to e-Learning the previous section reflected on the services that are very important for the effective use of the library resources. This theme considers the experiences of the librarians whose duty it is to render the embedded support services required for a successful e-Learning approach to teaching

and learning. It also reflects the opinions of those who rely on these services for their teaching (academics).

4.4.2.1 Librarian's perspective

The role played by librarians in the success of e-Learning could not be ignored. It has been suggested in literature (see Vatnal et al., 2004 as was reported in section 2.4 of this report) that libraries and their librarians are the important factor for a successful e-Learning environment. Embedding library services into e-Learning should subsequently ensure the success for e-Learners as well as the academics that also use the resources for their teaching and research activities. For this process to be successful the data revealed that information literacy programs were essential and were being offered by all the libraries although the circumstances and approaches differ from one university to the next. This was due to logistic and infrastructural problems. A further detailed explanation has been provided in the section below.

4.4.2.1.1 Information literacy courses and their impact on e-Learning

It is the duty of the librarians to always conduct information literacy programmes or training programmes to teach library users how to find information in the library. With regard to this training, it was considered to be of importance by the e-Learners who needed it to have access to the library's support services. Respondent 1 at institution A, testified to this by stating that:

> *'We offer reference services and lots of training like e-Resources, Endnote, profiling, etc. to all our students and staff alike. Training is done online, telephonically, face-to-face or via email. All our services [training] are available online like e-reserves, e-Books, and e-tutorial'*.

This implies that at institution A, there is an ongoing training initiative being done by the staff members of the library. Considering the various training methods and facilities being used for the training, one would conclude that e-Learning library users are provided with information literacy courses at institution A. This training helps the library e-Learning users to use resources through organised training programs. Literature (Gruca 2010) purports that this has always been one of the core services of academic librarians. Additionally respondent 2 from institution A mentioned that all of the information literacy course programmes are also embedded onto the LMS of the university.

The information literacy course at institution B was similar to that of institution A and the librarians were more conversant with the whole programme and the process involved in effectively teaching e-Learners. The institution had a high regard for the course as it was realised that information literacy programmes play a major role especially for new e-Learners who are using the library for the first time. Respondent 2, one of the librarians reported that:

> '*We do a lot of online Information Literacy training from the very first year to all the students even to the post-graduate level. For instance on things like; online tutorials, e-Resources, e-reserves´*

It was thus understood that at institution B the information literacy courses were deemed important for every student although the e-Learners could be said to be the most valuable benefactors. Through the courses therefore library users [e-Learners] get reliable knowledge about library services, collections and using the catalogue from a reputable source – the librarian. Unlike institution A the information literacy courses were not found in the LMS of institution B since they were in the process of developing one. Nevertheless, one thing common between the two universities was that all Subject Librarians offer Information Literacy to the academic departments (including staff and students). Teaching methods through online and games were amongst the various methods that were used by these librarians. Literature predicts that online training methods will gradually become more popular and be widely accepted by library users. Such trends were also experienced by these libraries.

Concerning institution C, there has been a remarkable change in how the information literacy programmes are being conducted. Initially, the librarians used to wait for academics to come and request for library support services and with the introduction of e-Learning, the librarians decided to organise workshops and information literacy courses for the academics and also for e-Learners with the aim of helping them to have easy access and fully utilise the e-Resources in the library. At the time of the study however, it was realised that few academics were willing to be part of the information literacy courses as was noted by Evans and Mutula (2014) and that there is a low level of computer literacy amongst the staff of institution C. Respondent 2, a Subject Librarian reported that

> *'I've been offering computer literacy training for some years now and from my experience, few academics turn up for the training even though they don't know how to effectively use computer'*

It is evident from the respondent that a significant number of staff members do not know how to effectively use computers to the level that could effectively cater for the needs of e-

Learners at the university. Nevertheless, there has been an increase in the number of staff who could be considered computer literate compared to the time Evans and Mutula (2014) made their observations. Such a level of expectation on information literacy was also recommended by Wang and Hwang (2004) who said that information literacy programmes offered by librarians must match the students' (e-Learners inclusive) and academics' needs and assist them towards constructing their knowledge map through the use of the library. The information literacy programme at institution C was not found to be offered through the LMS. The main reason for this was because the course was offered by the library and the librarians were not part of the LMS. Such a state of e-Learning affairs at institution C was not recommended nor seen in literature but rather what was found in literature was that librarians should become a part of the e-Learning process and actively participate in the learning process by providing online interaction and guides, modules, as well as a reference service through or with the use of LMS (Vatnal et al., 2004).

4.4.2.1.2 Same responsibilities different outcome on e-Learning

Although the librarians within the province were offering similar services that are considered to be of benefit to e-Learning, the manner in which they are executed had various outcomes on e-Learning. This section will thus present the analysis on how e-Learning is being affected through the responsibilities of the librarians.

All the librarians reported that they are usually represented at Faculty Board meetings. The meetings amongst other things discuss academic issues and academics are also present at these meetings. With respect to institution C respondent 3 said that,

> "*We were not usually part of the meeting but we recently realised that we were not in touch with those [academics] we were serving*."

The absence of academics at institution C was recently rectified although the participants could not relate the justification to the presence of e-Learning that, notwithstanding e-Learning has benefited from the initiative. At institution A and institution B there had always been the presence of a librarian at the Faculty Board meetings and perhaps this also could account for the level of proficiency when it comes to e-Learning embedded support services. On a general note, all three universities' librarians were present at the faculty board meetings to educate academics about the recent innovations of updates with respect to e-Learning and other library embedded support services in general. This is what they said from their respective universities.

Respondent 3 from institution B said

> *'Like I said before our academics depend on us most of the time for information on what is going on in the library. There are many application but we have to select the good ones and inform the staff during the meetings we usually have with them'.*

Respondent 1 from Institution A said

> *'When you are dealing with online things there are updates daily and we [the university] also have to keep in track with them. Sometimes we even get some of the information from our e-Learners requesting if there are some programs available, which we usually do have them'*

The institution A respondent said:

> *'We do our best to tell the academics all that there is available for use at the library and some of them do make use of it but I honestly don't think most of them try to use them, but we just keep on trying anyway. I can also understand with the academics here since we are not connected into the university's LMS it's hard for us to have that online communication within our academics and this affects the e-Learning initiative between the library and the academics.'*

From the participants it will be realised that both institution A and institution B have the benefit of their librarians being connected into the LMS of their institution and in turn facilitates the process of e-Learning between the librarians and the academics. With respect to institution C the effects of the librarians' absence have shown to have an effect on the quality of communication between the academics and librarians for the benefit of e-Learning purposes.

The selected libraries are going digital and as has been reported in literature (Sharifabadi, 2006) are built to provide direction to e-Learners and to rescue them from information overload. There is therefore a need for a readily available information technology (IT) expert to be in or around the library should there be a request for his or her services. The librarians at institution A and institution B reported that they have such personal within their reach while those at institution C did not have anyone dedicated to them. It was revealed by the respondents that the IT official was responsible for helping better the electronic services of the library and also that of e-Learning. The role played by these librarians at all the selected universities has helped to propel e-Learning in particular and all the other library support services in general.

4.4.2.2 The academics' perspective

Irrespective of the type of teaching and learning institution, the roles of academics are most crucial for the success of the institution's educational objectives. With the emergence of e-Learning the role of academics has arguably been much the same; with the only exception being that they have to rely on the Internet and other information technologies to support their teaching activities.

At UNIZULU, there has been an interest in e-Learning which is the mainstream trend of higher education institutions in South Africa. The role academics at UNIZULU play in their engagement with e-Learning may vary with other institutions as e-Learning is only an embedded part of the teaching and learning fraternity of the institution's library support services. Bearing this in mind, respondent a1 said that;

> *'The systems administrator is responsible for adding modules, and provides logins and passwords to academics, but academics are responsible for the design and planning of their own modules'.*

This indicates that academics have access to the online system and rely on the system administrators for that. Thus whatever design and plan the academics use for teaching their e-Learners are their personal responsibility. Furthermore, as these academics design and plan their modules, there was a need to inquire if the e-Learners are actually making use of their presence and those of the academics online. There were mixed responses to this which were dependent on the type of course being offered and the level of computer literacy of the academic. That notwithstanding, in response to the question if students use the e-Resources that are hosted on the system by the library, respondent a2 an academic of less than five years' experience at institution C said that;

> *'Students do use the library I notice that when I read their assignments, but I cannot comment as to whether they are able to use to find what they are looking for and that they are able to use the e-Resources offered by the library on their own'.*

There seems to be an indication that students might need to be trained in how to use and access the institution C e-Resources especially those who depend on e-Learning. This situation seems not to meet Boumarafi's (2009) recommendations as he stated that e-Learning must meet the demands of the information society as ICTs are reshaping the educational environment through the library. Therefore e-Learning caters not only for the needs of academics and the university community but should also be extended to the needs

of anyone interested in learning. Based on the standards of UNIZULU Boumarafi's recommendations will take a long time to be achieved and for this reason system should be limited to both on and off campus students who may desire to use e-Learning at one stage of learning or another.

Within the institution C community the data also revealed that there was a significant level of communication inadequacy between academics, librarian and e-Learners. The prevalent means of communication amongst these groups of persons was limited to access through emails, telephone (intercom for staff) and face-to-face communication or at the faculty board meetings which usually occur once a term. The online option is the most technologically advanced option available in the university and the library's webpage is where the institution C community (e-Learners inclusive) can communicate with the library online. In understanding the sufficiency of using the university's library web page as a means of communication respondent a1 said,

> *'The library's webpage also does not offer everything, and if one does not use the Discovery Tool where all e-Books are hidden and where all the library's e-Resources are, one would think the library does not have e-Books'.*

The academics are indicating that the library's web page is not designed in the most user friendly manner and it becomes difficult for them to easily locate material from the web page. This also could be a problem for the e-Learners who frequently have to go to the library for e-Resources and information on the library website. According to the respondent a2 this has created a problem and she said '*there is no collaboration between me and my Subject Librarian'*. This could also allude to the fact that the Subject Librarian does not have access to the LMS that facilitates such collaboration. In her request she desires that she *'would want the librarian to know all materials needed for all my modules and for my students.* This is yet to be a reality realised at institution C, as such problems have an impact on the process of teaching and learning with regard to the needs of e-Learner who seems to depend on such collaborations for their learning. According to literature (Boumarafi, 2009) there exists a strong argument that e-Learning is an interactive and collaborative learning process and hugely depends on the parties involved who are responsible for such a level of interaction. Respondent a3 anticipates that the collaboration will be of help to her teaching and explains it thus:

> '*This will also help me only to send students to the library if I know for sure that the material that I need is already available there. If I tell the librarian all my needs it would be easier for her to organise the material I need.'*

At the time of the study this was only at the level of expectation from the academics and the Subject Librarians who on their part were willing to assist the academics and their e-Learners with their support services available at their disposal.

Comparatively UNIZULU seems not to have been far adrift with respect to the availability of resources when compared with their counterpart institutions; UKZN and DUT respectively. Irrespective of that, the management of the available resources at UNIZULU seems to have been the area which can account for the difference in the quality of support services that are being rendered to e-Learners. When asked how the library manages the resources available to support the academics with e-Learning respondent a2 responded that;

> '*Nothing at the moment is being contributed by the library in supporting e-Learning. There is not much e-Resource available for my students. There are e-Books, but they do not cover everything on my subject field. The audio-visual section is quite outdated. I would love to see the increase in e-Books.'*

Besides the management problem of e-Resources experienced by these academics there is also a problem of shortage and out of date resources that according to respondent a3 need to be updated. Under such circumstance there would be a tendency for the academics not to rely on e-Resources for their teaching and this will hugely affect e-Learners and perhaps as a consequence lead to drop out; in the worst case scenario. In addressing this situation and to encourage e-Learning all the academics agreed that e-Learners need to be persuaded to use the library's e-Resources by so doing they will find interest in them and make the most out of them.

Literature has indicated that a significant number of academics are not computer literate, and there was a notion that they are not willing to make themselves available for training. This according to Evans and Mutula (2014) is a huge problem in the effective use of e-Learning at UNIZULU. The situation seems to have improved as most staff make themselves available whenever there are staff development programmes. Some staff opt for computer literacy training and thus improve their use of online services provided by the library. This has subsequently improved on the level of engagement by academics to e-Learning. As a result of having a reliable participant for the study, it was realised that most academics were not aware of the majority of the library support services including those that were most relevant for e-Learning which could be considered as e-Resources in general.

4.4.3 e-Learning and the LMS at the centre of embedded support services

This is the last of the three major themes that emerged from the data collected. The LMS was continuously being entangled with the library and their embedded support services being rendered to users by each of the selected universities. Access to the use of the LMS by both academics and librarians, was considered vital for e-Learning and thus could not have been ignored. Amongst the three selected universities, only institution A had a working LMS that was being accessed by librarians. At the time of the study, DUT was in the process of incorporating her librarians into the system while the host institution of the study (UNIZULU) acknowledges the importance of librarians into the system.

Through the use of the LMS, literature suggests that library services should be linked into the e-Learning for easy access by librarians and academics. By so doing the e-Learning curriculum becomes integrated support services and e-Resources. The LMS is therefore seen as a platform that can be used by the library to participate in academic curricula. When asked how important the LMS was to e-Learning, respondent 1 at institution A said that

> *'Having links in the LMS is very important. People [e-Learners] should be able to access library services wherever they are, which means that your library page should be designed in such a way that someone who is not in the library is able to get help or access your resources wherever he/she is'.*

From this perspective the presence of librarians in the LMS was important to the librarians at institution A and was for the benefit of both the academics and their students who at anytime and anywhere could have access onto the system for library electronic services. In an attempt to understand some of the services that these librarians render via the system respondent 1 goes further to say that,

> *'We provide all the information literacy courses in the LMS, we do have reference services and also chat services embedded into the system. Oh! There is also e-tutorials which is embedded into the LMS and one can be linked into the library's website form the LMS'.*

It was noticed that most of the library e-Resources were easily accessible on the webpage unlike institution C. Besides such accessibility, they also work with LMS which was directly linked to e-Resources and e-Books, to cater for the needs of their e-Learners. The access of librarians in the LMS have been well recommended and encouraged in literature by Sharifabadi (2006) who ascertains that linking the library to the LMS is very important and therefore was required to provide a meaningful connection between learning activities and learning resources. Institute A has been able to do this.

Although the LMS is still in the process of being finalised at institution B, many of the participants anticipated their rendering of support services which they all agreed would be beneficial for e-Learners at their university. Much of the anticipation was similar to what was already being done at institution A and the librarians had already been trained in the use of the system. At the time of the study, information literacy courses and e-tutorials were being embedded into the system. Much of the concern was in connection to the needs of the e-Learners as was revealed by respondent 2 who reported that

> '*our students are very important in everything we do for this reason we have to provide our contact details as Subject Librarians into the LMS, so that the academic staff and students may be able to interact with the library*.

Such initiatives were also considered by Sharifabadi (2006) who stated that digital libraries can help the e-Learning teaching staff by not only providing information content but sometimes contact information should there be a need for personal assistance. For the time being, it was realised that the current library support services were two fold. The first being that all the e-Resources were already being uploaded on the library web page and it was understood that access to them was also easy, similar to what was being experienced at institution A. Nevertheless, the participants considered this approach as a repository of the library. On the other hand, the participants revealed that the university is working on embedding everything into the LMS. Respondent 3 insists that:

> *"We want to embed everything into the LMS. We would want to have access and put links to our resources in the LMS. We would also like to link our LibGuides into the LMS."*

The LMS have shown that it could improve collaboration between the library and academics for the benefit of e-Learning. It was thus desirable that an e-Learner be able to access the library system through the LMS without going out of the learning page and opening another page where he/she is able to log into the library to access its services. e-Learners would be able to carry out online search on library materials from within the LMS. They would be able to get a direct link to course reserves or their student information.

At institution C, it was realised from the data that, e-tutorials were non-existent and the library webpage has no link into the LMS of the university. Also, there was no existing link between the LMS and the library online services. When respondent a1 was asked about the absence of a librarian in the LMS he said

'The library should have a presence in Moodle. Subject Librarians should contribute to LMS by adding, recommending books or e-Resources relevant for specific subjects. Also tell which resources are relevant for e-Learning. I would like to involve the librarian into the system'.

Therefore it was concluded that the library services are not embedded into LMS. For this reason librarians do not have access into the LMS. As a consequence they cannot post articles, link to e-Books or journals or any useful link into the LMS for e-Learners and academics to use for teaching and learning. At the time of the study the procedure was that the academics leave the LMS and go to the library web page in order for them to have access to any information they need from the library and likewise the e-Learners. There was also no corresponding email option or chat line on the website for any kind of direct communication. Such situations were challenged and are condemned in literature by Thachill (2008) who argued that if libraries want to remain dynamic and important in the education process they will have to redefine their roles according to those of the changing pattern of technological innovations and be constantly up to date. Therefore it was important that the institution C library embraces technological changes and creates digital libraries that offer innovative reference services, e-Resources and other cutting edge digital products. The consensus amongst the librarians at institution C was that they should have access into the LMS and this also created collegiality amongst the staff and further facilitates e-Learning in general. Respondent 2, a Subject Librarian requested that *a librarian should have access to all teaching portals so that if there is a new book or resource for a specific subject, then the librarian is able to announce to the specific department.* But because there is no direct link into the LMS between the academics and the library such services were not being rendered and was affecting both the academics and their e-Learners. Therefore e-Learners and academics will continue to go on the library webpage for access to e-Resources until the librarians have access into the system.

4.5 Conclusion

This chapter analysed and discussed the data that was collected through interviews conducted at three universities within the province of KZN. The data were analysed and presented firstly in accordance with the order in which questions were asked to the respondents. The results were mainly reflected as the general knowledge about blended learning and the services provided by libraries. These findings were instrumental and relevant in providing answers to the research objectives as seen in the next chapter. The second broad section of the chapter (section 4.4) presented the themes that emerged from

an analysis of the findings. The themes were discussed in concurrence with respondents' voices and with the support of literature. Such a level of coordination of the data along with literature contributed in providing answers for the research questions that underpinned the study. The relationship between the emergent themes and the answers to the research question has been provided in the next chapter, which also concludes the study. The conclusion will comprise a synthesis of the previous chapters, a summary of the findings in relation to the objectives of the study and also provides recommendations for UNIZULU as well as for further research.

CHAPTER FIVE

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This is the concluding chapter of the study titled *e-Learning at the University of Zululand: an exploration of essential embedded library support services*. As of 2012 there has been a significant investment into e-Learning by the Department of Higher Education and Training (DHET) through the Teaching Development Grant (TDG). Evans and Mutula, 2014 report that UNIZULU was one of the beneficiaries of such an initiative. The aim of this investment was therefore to assist in the development of a sound teaching and learning environment at UNIZULU.

From a pedagogical perspective, educational technologies were considered pivotal to best accommodate the needs of the e-Learners in South Africa (Evans and Mutula, 2014). From this context, the purpose of this study was to examine which support services provided by the UNIZULU library could be embedded in e-Learning.

The study also benchmarked the services of UNIZULU against those of other university libraries within the province of KZN. The research questions that underpinned the study are the following:

Is the UNIZULU library able to effectively support e-Learning? [Reported in section 4.]

This question was further divided into sub-questions as follows:

- What are the essential library services (and products) required to support e-Learning? [Reported in section 4.]
    - What do academics report regarding their expectations of e-Learning services being provided? [See section 4.]
    - What e-Learning services (and products) are being provided by library staff – as reported in literature and that are visible from library web sites? [Reported in section 4.]
    - What are the types of services being provided by other libraries within KZN to support e-Learning? [Reported in section 4.]
- Which services and products have the UNIZULU library earmarked for embedding in the university's eLearning initiative? [Reported in section 4.]
    - What accounts for the level of e-Learning support services being provided? [Reported in section 4.]

- How do the support services for e-Learning initiatives at UNIZULU differ from those provided by other libraries within KZN? [Reported in section 4.]

- How are embedded services, for the UNIZULU e-Learning initiative, being provided by the UNIZULU library staff? [Reported in section 4.]
  - What do academics at the UNIZULU report regarding their expectations of the embedded library services that support e-Learning? [Reported in section 4.]
  - Do the UNIZULU academic staff members have easy access to e-Learning support services provided by the UNIZULU library? [Reported in section 4.]

- Do the library staff members provide for the expected e-Learning support needs of the academic staff at UNIZULU? [Reported in section 4.]

In concluding the study - this chapter is divided into the following sections, summary of the findings, conclusions reached recommendations and the recommendations for further studies.

5.2 Summary of the findings and conclusions

The summary of the findings presented in this section have been arranged to reflect the objectives of the study that were introduced in chapter one (see section 1.6).

5.2.1 The essential services to embed

To begin with, the term e-Learning was used throughout the study so as to conform with the mainstream understanding of the terminology that the e-Learning approach at UNIZULU is being referred to, whereas, what is being done at UNIZULU, ought to be called blended learning –where face-to-face teaching is done in conjunction with traditional teaching. e-Learning in its true format refers to electronic learning without the use of face-to-face method of teaching. The recommendation is therefore that it is essential that terminology is standardised and used uniformly across the university – by both librarians and academics. The library could assist in establishing standardised lists of terminology to be used.

The essential services and products that are required to support the embedded e-Learning at UNIZULU do not meet the requirements when compared to those of the other two libraries within the province. From this comparison along with evidence from the literature review reported in Chapter 2 it is clear that the UNIZULU library still has a large number of these essential support services to embed in e-Learning at UNIZULU. From the research conducted it appears that all support services and products identified during the literature review and reported in Chapter 2 are essential in supporting e-Learning and have to be

embedded in e-Learning. These products were used not only for rendering e-Learning services but also for all the other forms of teaching and learning services at the UNIZULU library. As a matter of fact the provision of these services at the library were not necessarily initially intended to facilitate e-Learning however considering that they are also being required for e-Learning their presence has been of immense assistance to e-Learning.

5.2.2 Implications for embedding support services

An understanding of the implication of the embedded support services in support of teaching and learning at UNIZULU were understood on the basis of the effects that were being realised through the presence (or absence) of the library embedded support services. Conclusively, at UKZN and DUT the relationship between academics and librarians is stronger due to the well-established use of the LMS as was revealed by the librarians of these institutions. While at UNIZULU the professional relationship was based on interpersonal relationships between members of the community since there was only a telephone connection between the librarians and the academics. It is therefore recommended that introducing the presence of the librarians in the LMS would facilitate formal and informal communication between the librarians and the academics - thus, creating a positive environment that supports e-Learning. Considering that such communication is needed for interdependency in providing support services to e-Learners it is recommended that the collegial relationship between academics and librarians receives attention. The relationship is not optimal and this might, have an effect on the quality and level of service delivery for e-Learning and teaching and learning in general at UNIZULU. At UKZN, the presence of librarians has improved the level of collegiality and professionalism, and one can thus argue that this has had an effect on the quality of the services being rendered by the librarians. There is therefore a need to improve collegiality through the inclusion of librarians in the LMS at UNIZULU.

Furthermore, it was also concluded a lower level of job satisfaction was realised at UNIZULU. This was as a result of lower managerial support and interest for e-Learning support services in particular. For instance the librarians complained that they have requested to be included in the LMS training but their request has also been declined by the management due to insufficient funds. This they say makes their job unsatisfactory and when they compare how their colleagues at other institutions are being catered for, it prompts them to look for jobs elsewhere. Sometimes the staff development programmes organised by the university authorities do not take into cognisance the needs with respect to e-Learning services. While at UKZN in particular, the improved level of job satisfaction was

credited to the management's continuous assistance and support towards e-Learning and as a consequence the librarians were satisfied with their involvement with e-Learning support services and products they work with. It is therefore recommended that those in charge of managing and ensuring job satisfaction should consider providing continuous and improved assistance and support towards e-Learning. Such a move would have a huge impact on job satisfaction and the quality of the services being rendered at UNIZULU library. There were numerous staff development programmes organised during and before the time of the study as was understood by the researcher. Although these programmes have positive implications for the entire teaching and learning development of UNIZULU as a whole, there was nothing that was directly related to e-Learning. Needless to say that there were computer literacy programmes but they were optional and fewer academics attended such programmes. The librarians also complained that no such programmes have been organised for them with respect to e-Learning.

Besides other implications, the outstanding one with regards to e-Learning at UNIZULU is that the institutional recognition of e-Learning is not being given the attention it requires to be at the level of the other universities within the same province. For this reason, e-Learners find it hard to rely on and have access to e-Resources as was revealed by the academics. Furthermore, there is currently no policy in place that guides the rendering of e-Learning or persuades academics to be involved with e-Learning. As a consequence, the absence of this has made UNIZULU academics become nonchalant towards e-Learning. There is also inefficient sensitisation amongst staff and students for the use of online technology for e-Learning purposes. The general implications on the professional productivity of librarians and academics as a consequence of the above point have hugely affected teaching and learning at UNIZULU. Perhaps one could argue that this has played a vital role in the level of learner performance through the use of e-Learning support services embedded at the library. It is therefore recommended that a policy is put in place as soon as possible and that a rewards and information system addresses the institution's challenge.

5.2.3 Benchmarking embedded library services (and products) within KZN

Based on the data analysed, there seems to have been an absence of sufficient products and enough available services (quantity) present at the UNIZULU library to support e-Learning. Nevertheless, benchmarking the services and products at UNIZULU is still needed to improve the quality of e-Learning at the UNIZULU library.

The LMS was the main area for the need to benchmark embedded support services required to improve e-Learners to the level of UKZN which according to this study was the most

proficient and efficient of all the selected libraries. Also, the level of computer literacy of students will need to be improve through training at the first year level on how to access both LMS and the library resources simultaneously so that they do not get confused and also to be able to multiple task on their own.

The reasons for the benchmarking using the LMS is because, e-Learning integration offers libraries a powerful medium for reaching faculty and students directly as they engage in teaching and learning. Also the benchmarking of integration provides enriched services for the academic community that have been using the traditional library services. Furthermore, it will offer a way to reach those faculty and students who have begun to ignore the library and go directly to the Web page for their information needs. The integration can help the library to become an integral part of the e-Learning process and promote the availability of the library support services.

Academic libraries can build strong relationships with faculties by liaising with the departments in regard to library services and resources and students' instructional support. Benchmarking this relationship is essential for the success of the library and both the librarian and the academic will be sharing information and knowledge and encourages them to work together, develop their skills, and form strong and trusting relationships for the benefit of e-Learning.

5.3 Recommendations to the UNIZULU library

Based on the findings discussed in Chapter 4 and in section 5.2 above, the following recommendations have been suggested to the UNIZULU library authorities and librarians.

- Create a list of shared vocabulary (based upon the findings reported in Chapter 2) and ensure that it is made available/ accessible to all UNIZULU staff. This would ensure that there are no misunderstandings when communicating about e-Learning.
- There should be workshops and programmes aimed at enlightening the UNIZULU authorities about the benefits of embedding the library services into the LMS of the institution. The benefits have been mentioned in chapter two and have been shown to be beneficial to the library services of the other two institutions within the province. This was also echoed by the UNIZULU respondents.
- UNIZULU should carry out a survey to measure the level of satisfaction their students and academic staff feel after receiving support services from the library services. This could be done online or face-to-face. From the survey, the institution will know the areas of needs to be addressed and the level at which they need to maintain or improve on the services that they render.
- Training academics so that they could make use of library services should be accompanied with computer literacy programmes. This will help to enhance the use of library services and also improve the communication and collaboration between the library and the academics for the benefit of teaching and learning.
- There should be an improvement to the existing library webpage. A single access point where users are able to find whatever they are looking for using the library's webpage in a faster and easier manner than what is currently being done should be developed. The page does not contain everything the library has and as a result users end up not knowing that the library has so much information that would help them. Therefore, it should be made more user-friendly and the navigation should be improved.

Having presented some recommendations to the UNIZULU library, the next section discusses recommendations for further study. These recommendations are understood by the researcher to have benefits for e-Learning and library services in general.

5.4 Recommendations for further study

Based on the findings of the study the following recommendations were derived and have been presented for further study.

The researcher recommends that a similar study be carried out to investigate the opinions of the e-Learners. The study should consider the opinion of the e-Learners as their perspectives were missing in the current study. It was understood by the researcher that, for e-Learning to achieve its optimum level of efficiency, the opinions of e-Learners are of vital importance in contributing to the quality of support services that the UNIZULU library could provide.

Similarly, the perspectives of academics from other institutions should be considered for further studies. The views of academics from the other institutions within the province were not part of the current study except for those from UNIZULU – creating a truly comparative study. Their perspectives could perhaps bring in something innovative in contribution to the quality of library services and e-Learning in particular.

The researcher also recommends that a more in-depth study be carried out. This recommended study should focus on how to improve the relationship between academics and librarians at the UNIZULU community. The study should consider the LMS as a channel of communication with the aim of improving e-Learning services as a result of communication between the academics and the library staff. Such a relationship will benefit e-Learners in that their e-Resources will be well catered for by both parties responsible for providing and uploading e-Resources on the LMS and library web site respectively.

Considering that there is no current policy that binds and encourages e-Learning at UNIZULU, the researcher also recommends that a study should be done to understand the content and context of an e-Learning policy. It should be drafted in a manner that will not lead to conflicting responsibilities amongst academics and librarians.

5.5 Conclusion of the study

The study was set to examine embedded library support services for e-Learning at the UNIZULU library. The examined embedded services and products were to be benchmarked with those found at two other academic institutions also based in KZN where UNIZULU is situated.

The study was presented in five chapters commencing with an introductory chapter one, which provided an overview of the study. The main research question and objective of the study were also presented there. The second chapter was predominantly a literature review. With an understanding that UNIZULU was engaged with e-Learning as opposed to blended learning much of the review of literature was in this regard and the library embedded support services and products were discussed. The third chapter described and explained the research methodology that the researcher used in answering the research questions introduced in chapter one. One of the objectives of the study was to benchmark the support services for e-Learning against those of the other universities within the province. The participants for the study were selected from three different institutions. They provided their respective institutional perspective of the embedded support services and products that were being provided by their libraries. Chapter four discussed and analysed the data gathered through interviews and were presented in three major themes. The overall findings indicated that, although there are embedded support services and products at the UNIZULU library they are inadequate to meet all the needs and expectations of the academics for the purpose of e-Learning. The librarians apparently do not see themselves participating in the UNIZULU's e -Learning initiative. This creates ineffective services that were being provided to the e-Learners. It also results in poor communication between the library staff and the academics. The final chapter, chapter five concluded the study and presented the recommendations.

On a personal note, the researcher has gained much insight into the rendering of e-Learning support services at the library and through the benchmarking against other universities, the researcher now understands what needs to be done at UNIZULU in order to improve their current e-Learning initiative.

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APPENDIX A

Interview guide (Librarians - Institutions A & B)

My name is Audrey Bongiwe Ntuli and I am conducting research for the Masters in Information Technology (MIT) degree at the University of Pretoria, Department of Information Science. My research topic is *e-Learning at the University of Zululand: an exploration of essential embedded library support services.* The study is focusing on identifying library essential services that could be embedded to support and enhance e-Learning initiative at the University of Zululand (UNIZULU). You have been specifically selected to participate in this research because (you have been identified as a known implementer/ you will be involved in implementing my recommendations/ you are one of the faculty already involved in providing on-line learning material).

Information provided in this interview will be treated in strict confidentiality. No name will be mentioned in the mini-dissertation and there are no known risks in participating. If you have any questions about this study, or would like additional information to help you in reaching the decision about participating, please feel free to contact me. My full contact details are provided on the business card that I presented to you.

Please be assured that the questions in this interview have been reviewed and received clearance from the Research Ethics Committee in the Faculty of Engineering, Built Environment and Information Technology (EBIT) at the University of Pretoria. All the responses received will be analysed and a report will be submitted to the University of Pretoria. However, the decision to participate in this study is yours. I will share the interview transcript with you and am also prepared to provide you with an electronic copy of my dissertation if you are interested – for which I will then need your email address.

Please, may I record the interview with the digital recorder? Although I will be taking notes during the interview I do not want to miss any of your comments.

It is anticipated that the results from this study should help to improve the services rendered by the library. Your participation is therefore much appreciated. Thank you, in advance, for your cooperation and for agreeing to participate in the research study.

Note: All sub-questions will only be asked to prompt further discussion if necessary

1. What is your understanding of blended learning?
2. Does your library host a library page from where online content can be accessed or are your products and services embedded within the Learning Management System (LMS)?
3. What library services does your library render to support blended learning?
    a. You did not mention "*information literacy/ e-tutorials/ linking e-Resources/ ask a librarian". Why do you not make provision for the service?*
    b. You did not mention "*e-Books/ e-reserves/ e-textbooks*". Is that not a product that you embed?
4. Are the students satisfied with the scope of the existing online library services?
    a. What measures do you use to check their satisfaction?
5. Are you aware of problems that students face when accessing the library services?
    a. If "no" move to the next question.
    b. What are they and how did you become aware of these problems?
    c. Has the library developed a strategy to overcome any of these problems?
6. What suggestions/ recommendations do you have to assist me in designing really useful online library services to support online modules at UNIZULU?
7. Is there anything more you would like to add?

Thank you very much for participating into this interview

APPENDIX B

Interview guide (Librarians – Institution C)

My name is Audrey Bongiwe Ntuli and I am conducting research for the Masters in Information Technology (MIT) degree at University of Pretoria, Department of Information Science. My research topic is *e-Learning at the University of Zululand: an exploration of essential embedded library support services.* The study is focusing on identifying library essential services that could be embedded to support and enhance e-Learning initiative at the University of Zululand (UNIZULU). You have been specifically selected to participate in this research because (you have been identified as a known implementer/ you will be involved in implementing my recommendations/ you are one of the faculty already involved in providing on-line learning material).

Information provided in this interview will be treated in strict confidentiality. No name will be mentioned in the mini-dissertation and there are no known risks in participating. If you have any questions about this study, or would like additional information to help you in reaching the decision about participating, please feel free to contact me. My full contact details are provided on the business card that I presented to you.

Please be assured that the questions in this interview have been reviewed and received clearance from the Research Ethics Committee in the Faculty of Engineering, Built Environment and Information Technology (EBIT) at the University of Pretoria. All the responses received will be analysed and a report will be submitted to the University of Pretoria. However, the decision to participate in this study is yours. I will share the interview transcript with you and am also prepared to provide you with an electronic copy of my dissertation if you are interested – for which I will then need your email address.

Please, may I record the interview with the digital recorder? Although I will be taking notes during the interview I do not want to miss any of your comments.

It is anticipated that the results from this study should help to improve the services rendered by the library. Your participation is therefore much appreciated. Thank you, in advance, for your cooperation and for agreeing to participate in the research study.

Interview questions:

Note: All sub-questions will only be asked to prompt further discussion if necessary

1. What products and services, which are being rendered by the library in support of learning, do you regard as important?
2. Are library users satisfied with the scope of the existing library services or are you aware of deficiencies?
    a. Please explain your answer
3. What online products and services are already being rendered successfully by the library?
    a. You did not mention "*e-Books/ e-reserves/ e-textbooks".* Should we consider that as an essential on-line product also?
    b. You did not mention "*information literacy/ e-tutorials/ linking e-Resources/ ask a librarian".* Should we consider that as an essential on-line service also?
4. Are you aware of problems that e-Learners face when accessing the library services?
    a. If "no" move to the next question.
    b. What are they and how did you become aware of these problems?
    c. Has the library developed a strategy to overcome any of these problems?
5. What suggestions/ recommendations do you have to assist me in designing really useful library services to support online learning?
6. Is there anything more you would like to add?

Thank you very much for participating into this interview

APPENDIX C

Interview guide (Academic Staff – Institution C)

My name is Audrey Bongiwe Ntuli and I am conducting research for the Masters in Information Technology (MIT) degree at University of Pretoria, Department of Information Science. My research topic is *e-Learning at the University of Zululand: an exploration of essential embedded library support services.* The study is focusing on identifying library essential services that could be embedded to support and enhance e-Learning initiative at the University of Zululand (UNIZULU). You have been specifically selected to participate in this research because (you have been identified as a known implementer/ you will be involved in implementing my recommendations/ you are one of the faculty already involved in providing on-line learning material).

Information provided in this interview will be treated in strict confidentiality. No name will be mentioned in the mini-dissertation and there are no known risks in participating. If you have any questions about this study, or would like additional information to help you in reaching the decision about participating, please feel free to contact me. My full contact details are provided on the business card that I presented to you.

Please be assured that the questions in this interview have been reviewed and received clearance from the Research Ethics Committee in the Faculty of Engineering, Built Environment and Information Technology (EBIT) at the University of Pretoria. All the responses received will be analysed and a report will be submitted to the University of Pretoria. However, the decision to participate in this study is yours. I will share the interview transcript with you and am also prepared to provide you with an electronic copy of my dissertation if you are interested – for which I will then need your email address.

Please, may I record the interview with the digital recorder? Although I will be taking notes during the interview I do not want to miss any of your comments.

It is anticipated that the results from this study should help to improve the services rendered by the library. Your participation is therefore much appreciated. Thank you, in advance, for your cooperation and for agreeing to participate in the research study.

Interview questions

Note: All sub-questions will only be asked to prompt further discussion if necessary

1. What is your understanding of online learning support?
2. Please explain your plans with regard to the development of online learning content.
    a. Which Learning Management System (LMS) are you using?
    b. Do you foresee that the library should have a separate library page or should these products and services be embedded within the LMS?
    c. What is the vision behind your modules/ what are you wanting to achieve?
    d. Who is involved in planning and designing the online modules?
    e. Are you planning to involve the librarian?
3. Which library products and services do you regard as essential to incorporate/ embed in your e-Learning modules?
    a. You did not mention "e-Resources, *e-reserves, e-textbooks, etc". Why not?*
    b. You did not mention "e-tutorials" do you see any use for them?
4. To what extent does the library already support the objectives of your online modules?
5. Which other library products or services would you recommend to be included as soon as is possible?
6. Do you use electronic library resources yourself when teaching? Please explain your answer.
    a. Please give me some detail regarding the resources and the process you follow?
    b. Why do you not use the on-line resources?
7. Are you able to tell us anything about the information usage behaviour of your students online?
8. What else can be done by the Library to help enrich the information component of the modules? (Is there anything more you would like to add?)

Thank you very much for participating into this interview

APPENDIX D

Informed consent form

1 Title of research project: "*e-Learning at the University of Zululand: an exploration of essential embedded library support services*."

2 I ……..hereby voluntarily grant my permission for participation in the project as explained to me by **Audrey Bongiwe Ntuli.**

3 The nature, objective, possible safety and health implications have been explained to me and I understand them.

4 I understand that the interview will be recorded using a digital recorder. I also understand that I have the right to refuse to be recorded.

5 I understand my right to choose whether to participate in the project and that the information furnished will be handled in confidence.

6 I am aware that the results of the investigation may be used for the purposes of publication. I have been guaranteed that all information gathered from me will be anonymized before use.

7 Upon signature of this form, I will be provided with a copy of the form.

8 An electronic copy of the final dissertation will be made available to me if I would like to receive it. If so: I will provide my e-mail address below:

……

Signed: _____ Date: _____

Witness: _____ Date: _____

Researcher: _____ Date: _____