

THE RELATIONSHIP BETWEEN THE USE OF INFORMATION AND
COMMUNICATION TECHNOLOGIES (ICTs) AND DOCUMENT DELIVERY
SERVICE AT AN OPEN DISTANCE LEARNING INSTITUTION

by

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DECLARATION

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I, Sonto Annah Morudu, declare that the above dissertation is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

Sonto Annah Morudu

Date

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First and foremost, I would like to thank the almighty God for assisting me to complete this study. Yahweh, I bow down and worship You. You are my God. Thank You, Lord Jesus, for your grace and mercy through all the years of my research. You deserve the praise that my project has reached completion.

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DEDICATION

This dissertation is dedicated to the following people, whom I missed when I took time away from them during the years that I was working on this dissertation:

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ABSTRACT

The purpose of this study was to examine the relationship between the use of information and communication technologies (ICTs) and the document delivery service (DDS) at an open distance learning institution (ODL). A quantitative survey was conducted using a convenience sample (N=107) of the students registered in the Master's programme with the College of Education (CEDU) at the University of South Africa (UNISA). Pearson's correlational analysis was used to determine the students' perceptions of the relationship between the use of information and communication technologies (ICTs) and the DDS at an ODL institution. The results indicated a negative relationship between computer literacy and communication channels. Furthermore, the results indicated that information literacy skills positively and significantly predict the means of access to the Internet and library skills training predict access to information. The findings of this study show a need for future research in exploring the association between the use of ICTs and document delivery services. In order to rectify the challenge in an ODL institution, it is suggested that ODL institutions should ensure that both librarians and students possess the required skills and competencies. It is recommended that future research takes into consideration the limitations of this study.

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LIST OF ABBREVIATIONS AND ACRONYMS

ACRL	Association of College and Research Libraries
AirPAC	Air public access catalogue
ALA	American Library Association
AMA	American Medical Association
APA	American Psychological Association
AU Library	Athabasca University Library
BLDSC	British Library Document Supply Centre
C/ILL	Circulation/Interlibrary Loan
CALICO	Cape Library Consortium
CD	Compact disk
CD-ROM	Compact disc read-only memory
CEDU	College of Education (UNISA)
CHELSA	Committee for Higher Education Libraries in South Africa
CT	Communication technology
DCB	Direct Consortial Borrowing
DDS	Document delivery service
DISS	Directorate for Instructional Support and Services (UNISA)
DVD	Digital versatile disc
ESAL	Eastern Seaboard Association of Libraries
FOTIM	Foundation of Tertiary Institutions of the Northern Metropolis
GAELIC	Gauteng and Environs Library Consortium
HEDA	Higher Education Data Architecture
ICT	Information and communication technology

IL	Information literacy
IFLA	International Federation of Library Associations and Institutions
ILL	Interlibrary loan
ILLiad	InterLibrary Loan Internet Accessible Database
IR	Institutional repository
ISSN	International standard serial number
IT	Information technology
MLA	Modern Language Association of America
NCIP	NISO (National Information Standards Organization) Circulation Interchange Protocol
NLSA	National Library of South Africa
OA	Open access
OCLC	Online Computer Library Centre
ODL	Open distance learning
ODeL	Open distance electronic learning
OER	Open educational resources
OPAC	Online public access catalogue
OUM	Open University Malaysia
POPI Act	Protection of Personal Information Act
PDF	Portable document format
QR	Quick response
RFID	Radio frequency identification
RS	Resource sharing
SA	South Africa
SABINET	South African Bibliographic and Information Network
SAIS	South African Interlending Scheme
SANLiC	South Africa and the South African National Library Information Consortium
SAPO	South African Post Office
SEALS	South Eastern Academic Libraries' System
SFU	Simon Fraser University
SMS	Short message service
SRM	Student Relationship Management
SSC	Self-Service Circulation
SSPS	Statistical Package for Social Sciences

TSA	Technikon SA
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNISA	University of South Africa
UNR	University of Nevada, Reno
UofA	University of Alberta
VUDEC	Vista University Distance Education Campus

CHAPTER 1: GENERAL INTRODUCTION

1.1 Introduction

In recent years, tertiary education institutions and university/academic libraries worldwide have been focusing a great deal of attention on the implementation of information and communication technologies (ICTs), including those technologies that provide remote access to library resources and information services. ICTs play an essential role in the enhancement of service delivery in sectors such as education, government and business. Implementing, adapting to, and using these automated services require specific skills.

In libraries, the shift towards technological innovation stems from the aim to improve their services for 21st century library users, and the area of document delivery is no exception. The academic success of tertiary students depends on accessible and timeously delivered research and course material, in tandem with a rapid feedback system. This means that the use of relevant ICTs in the open distance learning (ODL) environment is crucial to the success of the distance learning enterprise – i.e. the backbone of the success, so to speak. According to the *Cambridge Dictionary* (2019), a *backbone* is the “part of something that provides strength and support.”

According to Odhiambo (2008:1), the concept of information and communications technology or technologies (ICT/ICTs) involves the convergence of two technologies – information technology (IT) and communication technology (CT) – and together they have formed ICTs. The convergence of these two technologies has contributed positively to the integration of information processing and communication. Odhiambo (2008:1) also points out that “information communication technologies systems have been designed to automate most business processes” to make them more efficient and cost-effective. Constable (2007:1) observes that new technological skills should be taught by all librarians, irrespective of their disciplines. This training should be readily and continuously available electronically. This will allow all learning institutions to depend on ICTs to cater for all learners. This will make it possible to reach all students, wherever they reside, and it will provide them with internationally competitive education that is on a high standard and internationally recognised. In this way, the

document delivery systems of ODL libraries are hugely dependent on ICTs for service delivery.

Since the University of South Africa (UNISA) is an ODL institution, it means that there is a subsequent need for all UNISA students to have adequate knowledge and skills to use the Internet, which hosts the various databases of the UNISA Library. The knowledge and skills required include: the ability to search for information; retrieve and download information for their studies; and to request printed material that is not available online or in the hard copy collections of the Library and via the online request system.

Based on the foregoing information, it is possible to conclude that the document delivery service (DDS) of an ODL academic library can be viewed as the key factor of the library's support to the teaching, learning and research activities of both academic staff and distance learners. Document delivery, according to Kisiedu (1999:108), "is not solely concerned with the dissemination of non-returnable library material but is also concerned about technological progression." In the context of the ODL library investigated in this study, the department of Request Services is a DDS, which functions as a support service to the various UNISA communities.

In this study, document delivery is viewed as a two-stream process between students and librarians. This includes a self-service stream, whereby students access information remotely and independently, and the service stream whereby the librarian provides or facilitates document delivery to students. In the second stream, students request information resources from the Library and the librarians process and deliver the required material timeously to students, irrespective of the media type.

The question arises as to whether or not the requested document is received quickly enough for assignment and research purposes. According to Dube (2017:87), the documents requested take time to reach students when posted through the South African Postal Office Services. Regarding this question, the researcher has chosen to limit the scope of the research and focus on the document delivery services of the ODL library to Master's students in the College of Education (CEDU) at UNISA. These students' experiences are investigated, and the investigation includes the document

delivery mode of operation; the use of ICTs; the students' perceptions; the information literacy (IL) skills needed to use the service effectively, as well as the Master's students' satisfaction with the document delivery service at the UNISA Library.

1.2 Background to the UNISA Library and document delivery services

UNISA is a comprehensive ODL institution that provides tuition to students worldwide. UNISA has positioned itself as a leading institution that provides world-class "education opportunities through ODL nationally, on the African continent and internationally" (UNISA 2008). In 2017, the enrolments for the year came to a total of 349,224 students, and in September 2018, enrolments had risen to 381,828 students (UNISA.HEDA 2017). In 2018 to date, 382,898 students were registered with the University of SA (UNISA. HEDA 2018). Raubenheimer (2010:1) affirms that "UNISA is the African continent's largest ODL institution, and it is one of the ten mega universities in the world."

Between 2004 and 2018, the number of students enrolling at UNISA has increased dramatically – an increase that can partially be ascribed to the merger between the former UNISA, the former Technikon South Africa (TSA) and the Vista University Distance Education Campus (VUDEC). This enlarged student body impacted on document delivery services, since the library users of the former three institutions came to depend on one centralised DDS to process and deliver information. The large size and diversity of its clientele meant an equally diverse range of information needs, which could be largely addressed by means of the Internet.

The UNISA Library compares favourably with other large academic libraries, as it is the most extensive library in Sub-Saharan Africa (Raubenheimer 2010; Buchholz 2011:115) and has an extensive collection of books and journals, both in print and electronic format (UNISA Library 2019; UNISA Library 2014). The UNISA Library has branch libraries in all the regional centres of the University, namely, Muckleneuk and Sunnyside (Pretoria), Johannesburg, Florida, Ekurhuleni, Durban, Polokwane, Rustenburg, Cape Town, East London and the Akaki Campus in Addis Ababa, Ethiopia. The Library also has two buses that provide mobile library services in Polokwane and Cape Town (UNISA Library 2018a).

The University entered in and fostered partnerships with other libraries across the globe, in order to provide information access to its students. For efficient service delivery, the Library aligns its services with information technology. Its online request service is, therefore, the interface between the students, researchers, academics and the librarians.

This centralised Request Service, which is located at the Library on the Muckleneuk campus (Pretoria), includes:

- An information search service provided by professional library staff;
- Lending services for books and other materials, such as audio-visual materials;
- A reproduction service for journal articles and reference materials that are only available in print or not-for-loan;
- A text conversion service for students with a visual disability; and
- An inter-library loan service, provided by para-professional library staff members for materials not available in the UNISA Library.

The Request Service has evolved over the decades (Raubenheimer 2014b) and ICT developments in the external environment have reshaped the service. There are various methods by which the UNISA Library users may request and obtain material from the library. These methods have evolved from written requests submitted on cards supplied to students and by post or by fax, to online request. Request forms are available at and emailed to the Library – particularly for inter-library loans and for downloading students' course reserves from the library catalogue via a course code search. Mobi-friendly access is provided to all these services via mobile devices. The users may still complete request cards when they are on campus, if the request system is offline.

The DSS of the UNISA Library follows the following process when handling users' requests:

Upon receipt of the (mostly online) requests, the dedicated Request Services Team, consisting of 87 staff members, processes the requests. The Team then delivers the requested material to the users in the format requested. Printed material is either posted for the user or sent via courier to the relevant UNISA Library branch. The door-to-door delivery of the courier service is mainly available to students living with a disability. The requested material can, however, be scanned and sent as an email attachment, or, if preferred, printed. Audio-visual material can either be posted or couriered. Users can return hard copy material by post, by courier or in person at any branch library.

The main ICTs, including library systems, that support the Library's Request Services, are:

- An online library catalogue with online request forms linked to the workflow system of Request Services;
- This online request system is linked to dedicated mailboxes (e.g. interlibrary loan (ILL) requests can be submitted by email or to the Library Enquiries Mailbox);
- The Library Enquiries mailbox is routed through the UNISA Student Relationship Management (SRM) system (which runs on the e-Gain program). This helps with the management of requests and the history of individual user('s) requests;
- The workflow system has a track-and-trace service that is linked to the student learning portal, myUnisa, so that students can check the status of a request;
- The Library's patron database is linked to the University Student System, which regularly updates student information on the patron database;
- The Library has a vast number of bibliographic databases and full-text subject databases, which allows the downloading of information;
- The UNISA Library Electronic Reserves collection is linked to the Library Catalogue;
- Sabinet's Pre-Request system, Worldshare, is available for inter-library loan requests via (Sabinet 2018);
- Social media (Facebook, Twitter and Pinterest) are used by the library and the students to communicate with one another;

- E-mail and Short Message Services (SMSes) are used to communicate with library clients regarding the receipt of requests; overdue items to be returned; and fines to be paid for the late return of library material.

It is evident that this ODL Library has implemented ICTs in support of improved delivery service to their clients and that the respective needs of a diverse client profile were taken into consideration. It makes provision for direct access to information, which can be delivered instantly online, and support systems for the delivery of information resources only available in print.

The Library's clients receive online training through Skype (synchronous) and LibGuides (asynchronous), face-to-face, one-on-one training, or training in groups to equip them to access online information directly, so that it can be delivered instantaneously. Training in the way to access information resources in print is still important, although Patterson (2008:194) reports that it could be argued that print material housed at the specific geographic location of the university library may be considered not readily accessible to the user population, as many ODL students live and work far from their educational institution. However, in the electronic age, libraries are still spending large amounts of money and substantial proportions of their annual budgets on print journals. This also applies to the UNISA Library, because the UNISA distance learning mode for the requests for these information resources to be placed through the Library's Request Services, so that it can be delivered wherever the clients are and according to their preferred mode of delivery.

Gross and Latham (2011:1) confirm the importance of information literacy (IL) training and are alarmed that many students do not have "proficient IL skills." According to Kargbo (2002:412), the main aim of an academic library is to support teaching, learning and research by providing quality and relevant material and services to its users. In order to find this relevant material and to make use of online services and digital resources, IL skills are taught by the UNISA Library to enable its library users to be self-sufficient when accessing the content required for their teaching, learning, and research output. The most significant training programmes offered in this regard cover the use of the library catalogue, an introduction to electronic resources, the use of reference sources, reference techniques, advanced information searching and

retrieval skills. However, as Rantlha (2017:1) indicates, the UNISA mode of teaching is different to that of residential universities, except for certain seminars, workshops and tutorial classes conducted at UNISA regional learning centres (UNISA 2019). The various branches of the UNISA Library do provide training to students who visit the library. Students benefit from training in the library, as librarians can guide them on how to use the relevant library systems to access to information. Clarke (2008:61) and Winter, Cotton, Gavin and Yorke (2010) observe that there is a range of essential computer skills that learners need to have to be successful e-learners, such as information search skills. The research skills fall into two categories, namely. “using the Internet to search for material, and ability to use a range of technologies for research purposes” (Winter et al. 2010).

Training in the use of e-resources is important – both in terms of helping students get the best out of the library’s resources and in terms of return on investment – because the Library invests in subscriptions to numerous full-text subject databases to provide quality information online and pays a significant amount of its budget on copyright clearance for the electronic reserves, which consist of prescribed and recommended reading for structured courses stored in electronic format. However, limited IL skills will challenge students in their attempts to retrieve the information they need from these databases, with or without the help of the relevant online discovery tools, or the electronic reserves. Therefore, students with IL skills will be disadvantaged and will be unable to complete their assignments and research timeously.

Although library orientation training, such as LibGuides training and Skype IL skills training, is provided in the Library, the researcher has observed that students registered in the CEDU often experience difficulties when searching for and retrieving information from the library’s online systems. It may be ascribed to the fact that some distance learners are unable to attend the training sessions due to a variety of challenges (Gumbo 2016:11). Panda and Mishra (2007:325) and Mogiba (2018:107) indicate cultural resistance when using technology or accessing the Internet as possible barriers.

1.3 Research problem

As changes in the internal and external environment continue to affect higher education and the nature of the academic library, there is a growing need for leaders involved in the training of library users to foster an understanding of how these changes impact on the use of library services. Providing document delivery services to library clients in an ODL environment requires an understanding – not only of how the service aligns with ICTs, but also of factors that impact on their use.

In this way, the proposed research problem is motivated by the need for an understanding of how ICTs impact on the use of library service. Since there is no clear understanding of how these factors relate to the use of the service, the knowledge should be gained for future consideration when developing IL training programmes. The success of the Library's DDS depends on the implementation of ICTs in the delivery of this service and, therefore, the importance of the successful use of ICTs by trained library clients.

Based on the foregoing information, the research problem can be expressed by following question:

Can ICTs be implemented in document delivery services and what are the factors that impact on the use of the service?

1.4 Research questions

The study aims at examining the use of ICTs in document delivery to Master's students in the CEDU at UNISA, which provides an ODL academic library context.

The main research question is, therefore formulated as follows:

What are the various factors prohibiting students registered for Master's programmes in the CEDU at UNISA from accessing and effectively using the UNISA Library's document delivery services?

In order to answer this research question, it is necessary to examine document delivery practices and IL training in ODL libraries and to establish whether a statistical

relationship exists between the use of ICTs and document delivery services. This means that the problem needs to be investigated further in terms of the following sub-questions:

- What is the relationship between the use of ICTs, computer literacy and communication services in the UNISA Library?
- What is the relationship between the use of ICTs, computer literacy and document delivery?
- Does the level of computer literacy, the use of ICTs and library skills training predict access to the Internet?
- Does the level of computer literacy, the use of ICTs and library skills training predict the ability to access information?
- Does the level of computer literacy, the use of ICTs and library skills training predict a preferred communication channel?

These questions would provide answers to the research question and the objectives of the study.

1.5 Research objectives

The research objectives of this study are to:

- Determine the nature of the statistical relationship between the use of ICTs and document delivery;
- Establish if the level of computer literacy, the use of ICTs and library skills training predict access to the Internet;
- Determine if the level of computer literacy, the use of ICTs and library skills training predict the ability to access information;
- Determine if the level of computer literacy, the use of ICTs and library skills training predict a preferred communication channel; and
- Recommend ICTs document delivery services practices.

1.6 Significance of the study

This study identifies gaps in the UNISA Library's mode of operation and the skills needed by staff and students. Based on the identified gaps, methods or means are suggested on how to bridge these gaps and support users in using ICTs more effectively to satisfy their information needs.

1.7 Delimitation of the study

The study is limited to one group of Master's students at a specific ODL institution – i.e. the CEDU at UNISA.

1.8 Research methodology

This study follows a quantitative method, because it best meets the research objectives involved in the study. Quantitative research can be defined as “the process of testing relationships, differences and cause and effect interactions among and between variables” (LoBiondo-Wood & Haber 2006:584; 2010:581).

A cross-sectional – not a longitudinal – research design is followed in the study, which means that the data is collected at one point in time. The survey used in this study gathers information on whether or not students use the Internet to access and request information from the UNISA Library. Where the use of the Internet has been established, the questionnaire aims at determining how it was used and how it contributes to enhanced document delivery services.

In terms of sampling techniques, a non-probability method, known as *convenience sampling*, is used to identify the participants of the study. According to Remler and Van Ryzin (2011:520) and Creswell and Creswell (2018:150), a convenience sample is a nonprobability sample that is chosen based on its availability and convenience and may be biased.

1.9 Ethical considerations

Polit and Beck (2008:170) observe that ethical considerations are followed to protect the rights of respondents and the institution and to ensure scientific integrity. To ensure

that the conduct of this study was compliant, ethical approval has been obtained from the UNISA Research and Ethics Committee of the Department of Information Science (UNISA 2016). Further permission and ethical clearance has been sought from the College of Human Sciences. In keeping with the research ethics procedures and policy of UNISA, the researcher has also requested permission from the Department of Library and Information Services at UNISA to conduct the research (Appendix F).

A copy of the completed ethical clearance form is attached (Appendix E), together with a covering Letter of Consent (Appendix A), which ensures respect for the anonymity, confidentiality and privacy of all participants. In the data collection process, research participants have received a Letter of Consent, a questionnaire (Appendix B) and a pre-test questionnaire (Appendix C). The respondents have also been informed that they could withdraw from the study at any time, should they wish to, without having to give reasons.

All sources used in this study have been acknowledged and the Turnitin anti-plagiarism system has been used to detect similarities and counteract plagiarism. The findings are presented in the form of this dissertation. Graphs, bars and pie charts are used to illustrate the results clearly for readers. At a later stage, the researcher will present a research paper at a conference and publish an article, in collaboration with the relevant supervisors, to report on the research findings.

1.10 Definition of terms

The following conceptual definitions will be used in this study.

1.10.1 Document delivery

Ewing (2009:734) defines *document delivery* as a service that is offered by academic libraries that allows distance education students to access or obtain the research materials required for their studies. Calvert (2001:110) further indicates that document delivery refers to “using new information storage and retrieval, copying, and communications technology to locate the original document and transmit a copy of it quickly to the requestor.”

1.10.2 Information literacy (IL)

Information literacy is defined as the ability to recognise an information need and the ability to locate, evaluate and effectively use the needed information (Williams 2010:148; Kinengyere 2007:329). According to Rantlha (2017:3), IL is one of the components that both postgraduate and undergraduate students need, in order to be self-sufficient in the search for and retrieval of information.

1.10.3 Information and communication technologies (ICTs)

Information and communication technologies (ICTs) refer to technologies that provide access to information through telecommunications. It is a term similar to “information technology (IT),” but it primarily focuses on communication technologies, which include the Internet, wireless networks, cell phones and other communication media.

Odhiambo (2008:1) also indicates that ICT systems have been designed to automate most business processes, so as to make them more efficient and cost-effective. Libraries use ICTs to speed up document delivery of online resources to remote students and, therefore, they eradicate the challenges of geographic distance experienced by students, who rely on face-to-face or campus services due to the digital divide.

1.10.4 Open distance learning (ODL)

Open distance learning (ODL) is defined as a “multi-dimensional concept that aims to bridge geographical, economic, social, educational and communication distance between students and the institution, students and academics, students and courseware and students and peers” (Raubenheimer 2010:2; Makoe 2010:5; UNISA, 2008:2). The ODL focus is to remove education barriers, such as access to information and the provision of learning material.

With the development of ICTs, students have expectations from ODL institutions for adequate support services to fulfill their information needs (Chattopadhyay 2014:8). Student support is viewed as one of the key components of ODL learning (Arko-Achemfuor 2017:658).

1.11 Chapter layout

Chapter 1: General introduction

This chapter outlines how the research on the relationship between the use of information and communication technologies (ICTs) and document delivery services by Master's students at an ODL Institution was conducted. The chapter includes the following sections: introduction; background to UNISA, the UNISA Library, and document delivery services; the research problem; the significance of the study; the delimitation and methodology of the study; and the definitions of key terminology used in the study.

Chapter 2: Resource sharing in academic libraries

This chapter provides an introduction to resource sharing (RS), definitions relating to the concepts of RS, document delivery, information networks, ILL services, as well as an evaluation of related policies and the use of ICTs in selected libraries.

Chapter 3: Information literacy

Chapter 3 outlines and discusses definitions of IL, IL skills, IL programmes and the evaluation of information programmes offered by selected distance learning libraries.

Chapter 4: Research methodology

This chapter outlines the research paradigm and methodology; the research approach and design; data collection methods; the choice of measurement and scales; the target population and the sampling method; and the analysis and interpretation of the collected data analysis.

Chapter 5: Results

Chapter 5 presents the analyses of the collected data, which have been performed with the aid of the Statistical Package for the Social Sciences (SPSS): Version 25. Statistical analyses pertained to descriptive statistics, correlations and regressions are also presented.

Chapter 6: Conclusions, limitations and recommendations

The purpose of this chapter is to conclude the study by presenting the findings. The limitations of the study and recommended areas for future research are also stipulated.

1.12 Chapter summary

From the preceding overview of the study, it appears that academic libraries operating in an ODL environment are changing as the environments in which they operate change. A significant change pertains to the use of ICTs in service delivery. This chapter provides background relating to the title of the study, the motivation for the study and the problem statement of the research, and it explains the value of the research and its delimitation. Lastly, the chapter outline of the dissertation is presented.

A theoretically based discussion of resource sharing in ODL libraries will be presented in Chapter 2.

CHAPTER 2: RESOURCE SHARING IN ACADEMIC LIBRARIES

2.1 Introduction

Chapter 1 introduced the research problem, the research questions and the objectives involved in the study, together with the challenges related to accessing and requesting library material by library users. It explained the ODL library environment in which the UNISA Library operates. It also presented an overview of the use of CTs in this particular library environment and, more specifically, the DSS of the Library.

The purpose of Chapter 2 is to foster an understanding of the work processes in resource sharing (RS) and the existing use of ICTs in document delivery services through the acknowledgement of the work of other researchers in this area. It seeks to provide an understanding of RS through document delivery services. In this chapter, the literature review provides answers to questions that cover the document delivery concept and components of the research question. The chapter also focuses on access to information sources that are owned and access to information sources that are not owned, but that are accessible through RS agreements and the use of related ICTs.

2.2 Definition of concepts

Nationally and internationally, there are various terms used for document delivery and RS, including *lending*, *interlending* and *interlibrary loans (ILL)*. The terms *document supply* and *document delivery* are sometimes used interchangeably (International Federation of Library Associations and Institutions 2009). To avoid confusion concerning terminology and concepts referred to throughout this dissertation, RS, document delivery and ILL (i.e. the terms most commonly used in South Africa) will be defined in the following sections.

2.2.1 Resource sharing

Muthu (2013:211) defines *resource sharing* as a “mode of operation whereby the functions are shared in common by some libraries.” This means that “resource” designates the materials, functions, services and expertise of the professional and non-professional staff” (Muthu 2013:211). The term “resource” can apply to anything

– a person, action, or an asset to which one turns for aid in time of need (Kent and Galvin 1977:17). Chelak and Azadeh (2010:118) define *resource sharing* as an essential way of overcoming the limitation of library clients' needs for information resources. According to Bakker (1999), resource sharing is based on a scarcity of financial resources, which naturally reduces the amount of library material that can be purchased by individual libraries and made available to their users.

RS in libraries is important, as it addresses library users' needs for information resources not available at their library. No single library can be self-sufficient in satisfying all the information needs of its users (Ahenkorah-Marfo & Teye 2010: 219; Anasi & Ali 2012:159; Burckel 2006: 226; Chelak & Azadeh 2010:22; Fraser, Dolabaille & Winter 2011:235). In agreement with the above recommendations, the UNISA Library (2016) state that RS ensures better access, faster provision and promotes the free flow of information resources for users.

Now that the RS concept has been clarified, the various document delivery services and procedures will be explored.

2.2.2 Document delivery

The literature provides various definitions for *document delivery* and each definition views document delivery differently. George (1993:2) defines *document delivery* as moving the physical container of information, regardless of hard copy or electronic format, from a supplier to a user and back again if needed. This differs from Alemna's (1997:5) more limited definition, which views document delivery in libraries and information systems as an aspect of interlending that concerns non-returnable library material to support access to, and the dissemination of, the material between libraries or information centres and their users. From the third perspective, posed by Ewing (2009:734), document delivery is seen as "as a service that is offered by academic libraries in allowing distance education students to access or obtain the research material required for their studies." Jones (2006:45), on the other hand, defines *document delivery* "as the process of responding to a user's request with either a physical artifact, a paper or film copy of the artifact, or an electronic representation of the requested item."

An analysis of these definitions shows that document delivery:

- Is moving the physical container of information. For the purpose of this study, this is regarded as a returnable item, such as a book in print or an e-book (typically downloaded or checked out in the electronic age as it can be returned by the database when the loan period expires). Other returnable items are the digital versatile disc (DVD), formerly known as the digital videodisk (DVD) or compact disk (CD);
- Is concerned with non-returnable copies of library material, which, in this study, will refer to photocopies of requested information resources such as journal articles or chapters of a book;
- Supports access to information: when distance education students are involved, it supports access to the research material they require for their studies. In this study, access is made possible through the Library's online public access catalogue (OPAC), via Worldcat, or through subject databases that provide bibliographic or full-text information;
- Disseminates information; and
- Responds to users' requests for information.

Furthermore, Ewing's (2009:734) definition affirms that a DDS aims to "provide the same level of information to library users regardless of their physical location". This relates to equitable service delivery, which is important in an ODL environment. Examples of research material may include journal articles, books, theses and dissertations. Ewing (2009:734) further comments on the mode of delivery of these library items by stating that, in a distance learning environment, document delivery services could be part of the interlibrary loan section provided for distance students.

Ewing's definition stresses the importance of self-service access to library resources. Self-service or self-access to information by ODL learners enables libraries to give efficient document delivery to its students, as it speeds up and makes the delivery of the needed library material direct. Because it is comprehensive and stipulates that document delivery "allows access to online information" regardless of format or distance, Ewing's definition is adopted for this study (Ewing 2005:681; 2009:734).

Flowing from Ewing's definition, *document delivery* can be defined as a requested service offered to students via self-service, on or off campus that includes both document delivery from the library collection and the delivery of items not available in the library collection and obtained through the global ILL system.

2.2.3 Interlibrary loan (ILL)

According to IFLA (2009), the term *interlibrary loan* is used interchangeably with *interloan*, *interlending*, *document delivery* or *document supply*. Hilyer (2002:2) also indicates that ILL may operate under various names, namely *interlibrary borrowing*, *interlibrary lending*, *interlibrary service*, *document delivery*, *resource sharing*, etc. ILL involves libraries sharing their resources by lending and borrowing information resources to and from one another on behalf of library users (University of Free State 2015:2). In the academic library context, this means that ILL relates to the need for library materials that are not available on campus and have to be requested from other libraries, either nationally or internationally. Traditionally, resource sharing was limited to ILL, where shared resources would be the information resources collected by libraries and made available to their clients (Buchholz 2011:57–58).

The ILL service provides returnable information resources that may be borrowed according to the specific library's policies and lending rules. The interlibrary loan concept later embraced document delivery, which is a transaction in which, upon request, a library furnishes a copy of a requested item to another library. This is done as a hard copy (photocopy) published or unpublished, or in electronic format at an established cost as non-returnable copies, between libraries and information centres, e.g. the British Library or the Online Computer Library Center (OCLC) or, more recently, if permitted by a library, to deliver copies from information resource subject databases in accordance with related licence agreements.

The different elements related to document delivery have now been defined. In the next section resource sharing, which has been defined as a means to provide access to information, will be explored in more depth.

2.3 Resource sharing

Buchholz (2011: 41) supports the view that RS is the predominant and alternative way of providing access to information. Muthu (2013:21) opines that RS can be established through partnerships between academic libraries and public libraries and between academic libraries themselves.

2.3.1 Partnership agreements with consortia

Cooperation is often done through the formation of consortia. In South Africa, some academic consortia have been formed, including the Cape Library Consortium (CALICO) in Cape Town; ESAL (Eastern Seaboard Association of Libraries) in Kwazulu-Natal; GAELIC (Gauteng and Environs Library Consortium) in Gauteng, and SEALS (South Eastern Academic Libraries' System) in the Eastern Cape (Darch 1999: 27). GAELIC closed down in 2011 due to a decision of the Foundation of Tertiary Institutions of the Northern Metropolis (FOTIM), which stated that the closure was due to a consolidation of projects and duplication of services (Willis 2012:6). The closure of the consortia did not have a significant impact on libraries, as ILL networking continued (Raubenheimer 2014a:3). Furthermore, access to information was made possible through the availability of databases to which academic libraries subscribe. Joint subscriptions are facilitated by the National Library of South Africa (NLSA) and the South African National Library and Information Consortium (SANLiC) (Raubenheimer 2014a:3).

2.3.2 Partnership agreements with multipurpose community centres

Another type of partnership pertains to agreements between libraries and multipurpose community centres (MPCCs), also known as *telecentres*. In South Africa, the MPCC initiative was initiated by the South African government to serve the public. The objective of the initiative was to improve the life of the community and to take government services to the people while making communication easier (Rabali 2005:6).

As an ODL institution, UNISA makes this collaboration possible through the Directorate Instructional Support and Services (DISS). DISS aims to facilitate effective and well-organised teaching and learning and to establish collaborative agreements

with telecentres throughout the country (UNISA. Telecentre Community Outreach 2018). The telecentres are private facilities situated in various South African provinces and are equipped with computers connected to the Internet, printers, photocopiers, and scanners (UNISA. Telecentre Community Outreach 2018).

The purpose of the telecentres initiative was to reach remote learners, so that they can access computers, the Internet, printers, photocopiers and scanners (UNISA. Telecentre Community Outreach 2018). Ntetha (2010:38) confirms the purpose of telecentres as being the provision of public access to information. A partnership such as those between UNISA and MPCCs provides support to students who cannot access the respective UNISA Library branches. This enables students to access, for example, their myUnisa and myLife student e-mail accounts, online libraries, as well as UNISA's Facebook page and Twitter feeds (UNISA. Telecentre Community Outreach 2018).

2.3.3 Partnership agreements with public libraries

In South Africa, UNISA has established partnerships with public and community libraries to enhance physical access (UNISA Library 2016). Through these partnerships, students gain access to the physical environment of other libraries, while also attaining library services and access to information from those libraries. In the Gauteng Province, the UNISA Library signed a collaboration agreement with Tshwane Public Libraries (Mbambo-Thata 2013:9). This partnership has extended library services to ODL students to "learn wherever they are" (Mbambo-Thata 2013:1).

Such partnerships are vital for the benefit of distance students, who are not able to access the UNISA branch libraries due to distance or other reasons. The public libraries benefit from the partnership with the UNISA Library by assisting its ODL learners, in that their staff are not only being trained to use the UNISA Library, but also to conduct database searching, the role of collection development, Web 2.0 technologies and how cataloguing is done in the academic library (Mbambo-Thata 2013:9–10).

Library partnerships are vital for distance education libraries and their users and are, subsequently, established to enhance services to clients and are established by

national and international partnership agreements with public libraries (UNISA Library 2015:7; Gozo 2016:6). For example, the UNISA Library has established partnerships in all the South African provinces, Partnership with Nkandla, Sekhukhune FET, CS Barlow, CN Phatudi, Sasolburg, Potchefstroom and De Aar. Some of the international partnerships that have been established include the Swaziland College of Technology, the United Nations Economic Commission for Africa and the Jimma University of Ethiopia. Other partnerships recently established are with the National University of Lesotho Library and the Free State Provincial Libraries (UNISA Library 2011:30; Gozo 2016:7; UNISA Library 2010:8; UNISA Library 2016a:11; UNISA Library 2017).

Open distance education libraries not only benefit from partnerships with public libraries, but also with other academic libraries.

2.3.4 Partnership agreements between academic libraries

Sharing of resources among academic libraries in the local environment is considered as an option before borrowing from the collections of global libraries. Groeling and Boyd (2009:43) note that “collaborative opportunities support the leveraging of institutional financial resources and librarian expertise.” As a result, end users are better served, in that they get access to a broader range of information resources than would have been possible if a library was operating independently. In some countries, like South Africa, collaboration regarding resource sharing among academic libraries is made possible through the establishment of partnerships, as well as participation in RS initiatives through interlibrary loans. Distance learners may need access to other university libraries’ resources to ensure task completion when they require access to information sources that are not available in the libraries of their own institutions (Ramasodi 2009:39).

Some academic libraries subsequently partner to share their information resources, and some partner with other institutions through a memorandum of understanding to support their partnership in terms of the required needs of students. In South Africa, the Committee for Higher Education Libraries in South Africa established such an agreement (Committee of Higher Education Libraries of South Africa 2017), whereas another partnership was established to “assist member institutions and client libraries to acquire better value for digital money collections than they could individually” (South

African National Library 2017). South African libraries also established partnerships, as they are urged to work together because of the explosion of knowledge, shortage of space, standardisation, professional staff development, drastic cuts in library budgets and technology changes (Muthu 2013:224).

Similarly, the Open University and Library Northern Ireland (NI) have recently also announced a new partnership with a view to share “information, ideas and experience in the interest of lifelong learning” (Open University Northern Ireland 2019). Sharing of resources for the benefit of clients is, therefore, a worldwide practice. For information not available in South Africa, the Online Computer Library Centre (OCLC) in the United States of America supports cooperation as “a leading global cooperative that is helping libraries to serve people by providing economic access to knowledge through innovation and collaboration” (Muthu 2013:219).

Partnerships between libraries are the main alternative of sharing information resources among libraries, which means that partnerships play a significant role in satisfying the information needs of libraries globally.

2.4 Information networks in support of resource sharing

The International Federation of Library Associations (IFLA) is the leading international body that represents the library users and library and information services interests (International Federation of Library Associations 2019). As such, IFLA serves as the “global voice of the library and information profession” (International Federation of Library Associations 2019). IFLA, which is a “networked resource sharing” initiative, which enables “access to resources through the collaboration of libraries worldwide”, supports resource sharing through the “global library” (International Federation of Library Associations. Document Delivery and Resource Sharing Section 2014). This is the reason for the UNISA Library also deciding to partner with IFLA.

2.4.1 South African Bibliographic and Information Network (Sabinet)

The South African Bibliographic and Information Network (Sabinet) was established in 1983 as a not-for-profit organisation for bibliographic control and computerised cataloguing among others (Willemse 1995:4; Fourie 2003:27). Sabinet not only aims

at having one library catalogue in South Africa that includes the catalogues of all South African libraries (Willemse 1995:4), it also plays a vital role in the South African interlending and document supply environment (Raubenheimer & Van Niekerk 2002:20).

The initial role of Sabinet was to support the cataloguing of books to be used by many libraries and to support acquisition (Willemse 1995:2). However, recently, Sabinet has started to digitise South African publications and to make them available in the *SA e-Publications* database, which provides comprehensive access to South African journals from 2001 onwards (Sabinet 2018b). These digitisation projects and the compilation of some other databases enable Sabinet to provide 'products' that are being used by libraries worldwide (Sabinet 2015b). Sabinet is a partner of OCLC in providing cataloguing services to Sub-Saharan Africa (Sabinet 2015b). According to Sabinet (2017; 2018b), some of the benefits of *SA e-Publications* for the subscriber include:

- Fully searchable articles in portable document format (PDF) format;
- Advanced search functionality that ensures more focused and accurate results;
- Ease of use; and
- Universal access 24/7.

The way in which libraries share this information is presented in the following section.

2.4.2 Development of resource sharing in global libraries

For many centuries, libraries such as the Library of Alexandria used to be essentially repositories of knowledge, but they were only physically accessible to the selected few (Brindley 2005:76). However, the development of global networks has enabled libraries to share their resources more easily. Examples of global libraries that have made essential contributions to resource sharing include the British Library and the Online Computer Library Centre (OCLC).

2.4.2.1 British Library (United Kingdom)

The establishment of the British Library as the national library of the United Kingdom (UK) in the mid-sixties, by the British Library Act of 1972, was a significant

development. In 2004, as many as 2.4 million documents were delivered to remote users via the service of the British Library (Brindley 2005:77). At its peak level of demand in 1998/1999, the document supply service of this library fulfilled over four million requests for individual documents annually. Their document supply statistics showed that more than 50% of the United Kingdom's requests came from the higher education (HE) sector (Brindley 2005:78). Improved access to the British Library was made possible by the British Library Document Supply Centre (BLDSC), which made requested items available within 48 hours of receipt (Raubenheimer 2014b:3). However, in recent years, the British Library experienced the effect of the information age, in that library users are now able to gain independent access to electronic resources via publishers' databases.

2.4.2.2 Online Computer Library Centre (United States of America)

As document delivery services developed, other significant document delivery contributions were made by the Online Computer Library Center (OCLC) in the United States of America. In South Africa, this institution contributed to the rapid delivery of requested library material (Raubenheimer 2014b:3). OCLC is "a global library cooperative that provides shared technology services, original research, and community programs for its membership and the library community at large" and is "making information more accessible and useful" (OCLC, 2019) OCLC 2015a).

Since its founding by a group of librarians, researchers, pioneers, technologists, leaders and learners in support of knowledge sharing and to drive library innovations (OCLC 2015a), OCLC has become a global network that connects libraries and contributes to resource sharing among institutions (OCLC 2019). In the second decade of the 21st century, OCLC (2014) reported new developments in document delivery services. Arnold, Sias & Zhang (2002:35) state that:

using ILLiad software provides automated interlibrary loan and document delivery service which allows users to submit (or cancel) requests and track the status of their request 24 hours a day, seven days a week from around the world-anywhere they have access to the Internet.

InterLibrary Loan Internet Accessible Database (ILLiad) is an electronic system that is used to request library items through ILL and to allow library staff in the United States

to track and monitor all journal requests made by users (OCLC 2015a). According to OCLC ILLiad (2019), the University of Toledo, Ohio (2019), Rigda (2010) and OCLC (2019), ILLiad offers the convenient option of delivering articles to users remotely, without going to the library or waiting for the material to be delivered or waiting for the mail from the library. In this way, ILLiad provides efficient workflow tracking and the reporting of ILL statistics, as well as the tracking and the monitoring of journal requests made by users (OCLC 2015). ILLiad still exists and is still used to “quickly and efficiently process and track requests” by libraries such as the University of Alberta Libraries (2015), Southeastern Louisiana University Library (2019) and the University of Nevada, Reno (2017).

2.4.2.3 OCLC WorldShare Interlibrary Loan

Similar to all library catalogues, *WorldCat* is a database, but it is also a global library catalogue that includes records of sources that are kept in libraries from all over the world that contribute their records to *WorldCat*. The catalogue includes records of all participating libraries’ collections (OCLC 2015a). This catalogue allows for the discovery of library resources, thereby making library collections visible to the global community for resource sharing purposes.

In 2014, OCLC WorldShare Interlibrary Loan replaced OCLC *WorldCat* to expand document delivery/interlibrary loan services in libraries. According to OCLC (2014) and Sabinet (2015a; 2017; 2019), OCLC WorldShare Management Services “is an integrated suite of cloud-based library management and discovery applications packaged together to give librarians a comprehensive and cost-effective way to manage library workflows and improve access to library collections and services.” WorldShare ILL, therefore, “allows libraries to participate in the largest resource sharing network in the world, with more options for getting materials directly into the hands of library users” (OCLC 2014). Sabinet (2015a) explains that WorldShare ILL packages interlibrary loan, circulation and license management applications together. When they use WorldShare Management Services, libraries can also save on costs; streamline and improve their workflow; obtain support in the management of print and e-resources; improve information discovery; and make other libraries more visible (Sabinet 2015a; Sabinet, 2018a).

2.4.3 Open access

The United Nations Educational, Scientific and Cultural Organization (UNESCO) defines *open access (OA)* as “free and unbridled access to scholarly information.” OA aims to “provide users with information unencumbered by the motive of financial gain or profits” (UNESCO 2015:5). OA resources and institutional repositories are based on cloud computing, which enables the sharing of academic and scholarly output (Chowdhury & Foo 2012:150). Therefore, OA aims at sharing information among researchers worldwide. Open access resources play a significant role in providing free electronic resources to scholars 24/7.

The OA movement complements resource sharing initiatives, particularly in libraries facing financial constraints. In a survey conducted by Hoskins and Stilwell (2011:51), it was found that “academic and research libraries worldwide have not been adequately funded and they, therefore, resorted to annual journal cancellations.” The reasons for South African libraries resorting to the cancellation of journal subscriptions, according to Hoskins and Stilwell (2011:60) include periodical budget cuts and price increases.

Examples of an international library that cancelled its journal subscriptions are the Brock University Library, which cancelled its Wiley-Blackwell subscription in December 2014, in order to balance the library’s acquisitions budget for 2014–2015 (Cavanagh 2014 & Majtenyi 2015). Musa (2016:2) reports similar findings concerning the federal university libraries in the northwestern states of Nigeria. Recently (in 2019), the University of Iowa Libraries has dropped hundreds of journal subscription due to budget constraints (McKenzie 2019). Open access resources have made it possible to support libraries in satisfying their users’ needs more cost-effectively.

2.4.4 Open educational resources (OER)

Open educational resources (OER) are defined as digitised material freely offered and accessible for educators, students and self-learners to use, re-use for teaching, learning and research, while the material may be adapted for their use or studies, according to various Creative Commons permissions (Hyllen 2006:1–2). Learning content (full courses, courseware, content modules, journals, etc.) are examples of

OER. OER are also reported to “have the potential to reduce costs; improve quality; and increase access to educational opportunities” (Wright & Reju 2012:181) and may be used by anyone, regardless of age, and anywhere (Wright & Reju 2012:187). OER can be accessed by multiple users simultaneously on and off campus.

2.4.5 Institutional repositories

An institutional repository (IR) is “an open digital archive of scholarly intellectual and research outputs” of a university and “contains and preserves theses and dissertations, research articles, conference papers, rare and special materials, and many other digital assets” (UNISA Library 2015). An institutional repository can make global access available to every intellectual output of academics, researchers and students and raise the visibility of their research. It may contain research data, research articles, teaching materials, as well as the outcomes of various other scholarly activities (Chowdhury & Foo 2012:146). Library clients benefit from open access, open electronic resources and the institutional repository, as these are “freely available” online and contain scholarly literature used for teaching and learning purposes.

2.5 Document delivery

The International Federation of Library Associations (2009:1) alludes to the link between document delivery and interlibrary loans. In both instances, the effective use of the Internet is inevitable. Arko-Cobbah (2004:270) is of the opinion that “access to the Internet is regarded as positive growth by librarians and that those responsible for document delivery services should be able to use it.” Garrison and Grudzien (2007:82) observe that the need for journal articles to be filled through document delivery services is decreasing, as an ever-increasing number of students can access the non-returnable material independently through various online packages. However, there is still a demand for books to be delivered via interlibrary loans, although its use has also decreased. When comparing interlibrary loan and document delivery services at a Caribbean educational institution, Fraser, Dolabaille and Winter (2011:244; 249) found that requests for journal articles through document delivery increased from 2007 to 2009, while fewer ILL transactions were received. Behr and Hayward (2008:290) also report a greater demand for document delivery services.

Similarly, research conducted by Raubenheimer and Van Niekerk (2015:76) reveals that, in South Africa there was a decline in the number of book requests via ILL. However, they do note that ILL is still an essential service at the UNISA Library. According to these scholars, document supply through ILL will continue to play an essential role at the UNISA Library and will remain in demand, although the nature of the scholarly communication process is changing. This is contrary to the prediction of Tonta and Ünal (2006:337; 481) that document delivery services may “gradually decrease and eventually wither away in the age of electronic journals as more journals become available online.” However, with the latest developments at OCLC’s *WorldCat* in mind, which may contribute to more efficient service, Fraser, Dolabaille and Winter (2011:50) suggest a continuous reassessment of interlibrary loan and document delivery services.

2.5.1 Technologies in support of document delivery

Several researchers have been reporting that information technologies have brought about changes in document delivery worldwide (Islam & Islam 2006:816; Tiwari & Sahoo 2013:1). This view is endorsed by Chowdhury and Foo (2012:149), who note that “information and communication technologies were a major driving force behind the evolution of digital library services over the past decades.”

A digital library may be defined as “online collection(s) of online objects” that is made accessible to, and made retrievable by, users and managed according to collection development, principles, and library policies (International Federation of Library Association and Institutions 2018). Henderson (1992) alludes to the fact that digital libraries provide:

- Users with remote access to unlimited information around the clock, including information from different sources, such as electronic textbooks, journals, full-text databases, compact discs read-only memory (CD-ROMs), films, microfilms, reference and bibliographic sources, so that users no longer need to visit the library in person (Wachira 2013:32);

- Up-to-date information (Hart & Kleinveldt 2011:39): ICTs can provide access to collections of both print and electronic resources; access to archives and special collections; and quick document delivery services;
- Information flexibility, which allows the use of information used by an individual according to his/her requirements (Henderson 1992); and
- Digital libraries also facilitate the reformatting and combining of data from different sources (Henderson 1992): ICT applications in libraries provide opportunities for e-resource development and allow libraries to disseminate the information according to their users' preferences (Natarajan, Ravi & Ravichandran 2012:48).

2.5.2 Self-service in document delivery

Sife, Lwoga and Sanga (2007) refer to the fact that the ICT changes in higher education affect delivery in higher education, whereas Zendesk (2019) points out that self-service is seen as the fastest and most cost-effective way to support customers. This statement can be critiqued in terms of the customer's level of technological skill when encountering such self-service options for the first time.

Chang (2011:4) explains the difference between self-service and traditional services as being the level of "interface" and "personal interaction." Furthermore, the most important self-service criteria are individual perceptions, as it is people who control the processes when the service takes place (Salomann, Kolbe & Brenner 2006:68). Ramasodi (2009:42), who identifies some self-service challenges, has found that remote students who "seek face-to-face assistance" are disadvantaged, as they are unable to access library material, get training or request and collect material on their own from the library. Both on and off campus services need to be equitable (Ewing 2005:681). Therefore, academic libraries have to ensure that distance learners have the same positive experience of all services.

Internet connectivity also challenges document delivery through self-service. These challenges can be put down to inadequate funding of libraries' ICT infrastructure; constantly changing software; software versions or upgrades; hardware; erratic power supply; the lack of technical (IT) knowledge among library staff; the lack of fast, on-

site IT support; and the complexities and costs of managing copyright and intellectual property rights (Britz & Lor 2006:103; FUTALIB 2013).

Ntetha (2010), as well as Adeleke and Emeahara (2016) express concerns as to library users' abilities to operate or use their IT resources. This results in libraries providing training to students, which, in turn, leads to a shift from techno-illiterate to techno-literate persons (Islam & Islam 2006:816). An investigation into ICTs in libraries reveals that they are typically implemented in the access, requests, communication, security and delivery services of libraries.

2.5.2.1 Information resources

Reporting on the changing roles of libraries and librarians, Islam and Islam (2006:816) observe that "more and more library users are using digital technologies and have access to global information resources via the web." Typically, ICTs allow enhanced access to information resources available in the library catalogue, full-text subject databases, electronic reserves and information available via the interlending system.

Sankari, Chinnasamy, Balasubramanian and Muthuraj (2013:19) point out that libraries use online catalogues to search for both hard copy and electronic library resources, explaining that OPACs allow users to conduct searches through various access points, which include searches for titles, authors, keywords, subject headings, course codes, international standard book numbers (ISBNs) and international standard serial numbers (ISSNs). At UNISA Library, OPAC searches not only provide access to printed sources available in the library, but also allow access to sources available in other bibliographic databases and journals to which the Library (UNISA Library [n.d.]; Sankari et al. 2013:19), for example the Encore Quick and Easy Search, the federated search engine, which is now EBSCO-based.

According to Rheiner (2008:376) and Rumble and King (2008:234), the growth in the number of available full-text resources increases annually, and this growth changes the information usage patterns of academic libraries. Users are now becoming accustomed to direct and immediate access to online resources and have high expectations when using online resources. Buchholz (2011:42) and Rumble and King (2008:236) note that electronic documents are easily searchable by keyword and

easily manipulated. Another benefit mentioned by Buchholz (2011:42) pertains to the time-saving advantage of electronic formats over the print or paper-based format. Students have a choice of either going to the shelves or searching full-text electronic resources online. Buchholz (2011:42) adds that electronic access allows simultaneous use by different users, whereas a print copy can be used only by one person at a time (in the context of borrowing).

2.5.2.2 Request services

Request services depend on the nature of the request by students and on whether the librarians processing the requests are skilled in processing and searching for and retrieving such material. Depending on the nature of the request and the librarian's responsibilities, it may take longer than expected before a request can be finalised.

It is crucial to speed up the request process, as it contributes to ensuring the provision of adequate, relevant and up-to-date library material in support of teaching, learning and research (Kargbo 2002:412). Therefore, many libraries have moved away from using a manual request system (Islam & Islam 2006:809). Online request systems contribute positively towards the speedy receipt and processing of requested material, as they help to eliminate human error on the part of the staff, who may misread the requester's handwriting (Raubenheimer 2014a:126). Raubenheimer (2014a:126) also reports on the inclusion of a "request mechanism linked to the online catalogue", explaining that the request function is accessible on computers, tablets or on mobile phones and distance users can place their requests for library resources when they access the library catalogue. Once the requestor activates the SUBMIT button, the processing of the request can commence in the library.

Nwezeh (2010:106) observes that university libraries across the world are more explicitly developing their library document delivery and information services for their distance learners with this benefit in mind. Technology is, therefore, rapidly moving libraries towards a self-service model, where library users request library material unassisted online and also track and renew borrowed material online (Burk 2006).

International Federation of Library Association and Institutions (2015) suggests that users should be encouraged to submit their requests electronically to improve

turnaround time. Raubenheimer and Van Niekerk (2015:80) suggest that the pre-request online system should be used to speed up the processing of requests and that training in this regard should be provided to clients. The UNISA Library also use an electronic request system, which enables students to make online requests from any device. Currently, Sabinet has migrated the pre-request ILL service to the WorldShare ILL request service (Sabinet 2018a).

2.5.2.3 Delivery services

Britz and Lor (2006:105) note that, in addition to online access to information, people also “need access to the physical products”, which, according to their understanding, implies that access to information must be balanced with the delivery of information. An electronic DDS, such as WorldShare’s Article Exchange system, is an example of such a system. According to Sabinet (2017), WorldShare’s Article Exchange system ships electronic articles or documents quickly, irrespective of their size. The portable document format (PDF) is the format that libraries are currently using to distribute electronic resources from electronic reserves, theses and dissertations (Kriz 2000:27; Rigda, 2010:77).

The advent of electronic document delivery has allowed students to receive library resources quickly from all over the world (Ewing 2009:734). This has resolved a problem that Raubenheimer (1996:194) pointed out long ago, when she stressed the importance of delivering requested print library materials for research and assignments purposes to clients timely.

Technologies in support of document delivery as a means of resource sharing have improved significantly since the early sixties. The following brief historical overview reflects details of improvements that have sped up the processes in document delivery to ensure the delivery of material, while it is still needed and relevant. These improvements pertain to photocopying machines, which became generally available in 1960 (Kinnucan 1993; Raubenheimer 1996:2) the establishment of OCLC, which was founded in the state of Ohio; fax machines in the seventies and eighties (Goldner & Birch 2012:6); the Ariel document delivery transmission software, which was introduced for interlibrary lending transactions in 1991 (OCLC 2015b) and at more than 400 sites worldwide in 1996 (Raubenheimer 2000:97); electronic books usage

via NetLibrary and ebrary since 1999 (Wicht 2011:206); an in-house automated track and trace system named LibFlow to track the status of requested library material at a distance education library since 1993 (Raubenheimer 2014a:127); radio frequency identification (RFID), which is the latest technology used in libraries for security, theft detection, tracking, monitoring, circulation check and inventory control (Chhetri & Thakur 2019; Nisha 2018); document delivery of material requested by clients through the client's preferred mode of delivery, which may include e-mail for journal articles delivered on the same day (Raubenheimer 2014a:8).

The historical overview of document delivery makes it clear that all these improvements point to making the requested information readily available. This, however, needs to be complemented by the provision of relevant communication services, so that library users can be informed about the status of the requested information.

2.5.2.4 Communication services

Borrowers “should be notified immediately” if the material is not available in order “to begin a search for an alternative lender” (Dell 2007:42).

Communication processes are enhanced by electronic communication technologies such as SMS, telefacsimile (fax), electronic mail, electronic bulletin boards and electronic conferencing. As observed by Polger (2010:17), email requests have increased since 2005–2006, which is why Ewing (2009:734) advises that students should get email addresses to allow them to take full advantage of the current technology in document delivery services. This view endorses Watson and Ranganathan's (1997:178), who observe that emails are not only used to deliver or receive requests, but also to communicate with students. Using different methods and platforms – such as telephone, email, text message, chat/instant messages and social media – offer real time service to distance learners (Sasso 2016:76).

The Ask a Librarian service is an example of how communication systems can be linked to the user's email accounts. For example, the UNISA Library and the Victoria Library have linked their Ask a Librarian services to their users' email accounts. According to the University of Victoria Libraries (2019), an Ask a Librarian online

service is an effective service, as a person can get help in person or via email or telephone. Such a service not only offers instant communication, but it is also cost-effective.

Social networks also play a significant role in creating relationships between libraries and their users. The most critical and ignored communication media are Twitter, Facebook, Instagram and LinkedIn. Raubenheimer (2014a:5) confirms that sharing of knowledge could be done through Twitter, Moblogs, Glogs, Wikis, LinkedIn and Facebook. Twitter and Facebook are used to ensure that information is broadcast to staff and students simultaneously (Raubenheimer 2014b:7). Skype and email are other communication vehicles that can be used to communicate the progress of requested library material with clients and for training purposes.

2.5.2.5 Training services

Online training modules have become the norm in libraries. Libguides, which are seen as content management systems, are curated knowledge used to promote learning (Springshare 2019). Libguides are easy to use (Springshare 2019) and librarians use them to “share information by creating online guides on any topic, subject, course, or any processor on anything” (Springshare 2019).

2.5.3 The role of mobile technologies in document delivery

As Raubenheimer (2012:25) observes, the 21st century is known for an increase in and penetration of mobile technologies. Raubenheimer (2012:26) further reports on the way in which an integrated mobile technology – namely Innovative AirPAC (air public access catalogue) – provides mobile access to the catalogue of the UNISA Library. She explains that a user can place a request for an item via this technology, which is then processed by the Library. Furthermore, the users have access to their loan records, global information and the collections of their own libraries. (Raubenheimer 2012:27). Raubenheimer (2012:27) further explains that a request for an item can be placed via the mobile technology and the processing can commence as soon as it has been placed. Mobile access to the loan record, global information and the own library’s collection is also possible.

AirPAC in libraries allows users to access OCLC's *WorldCat* on their mobile phones. Other mobile applications that are available include the reference management service provided by Ref Mobile; access to the Library's e-collections such as e-books, the library's vast number of subject databases and the Library's training services (Raubenheimer, 2012:28). Instant communication with the UNISA Library is possible via the mobile phones of remote learners using SMSes to send library notices, Quick Response (QR) codes for communicating information to learners through mobile phones as they can compress a more significant amount of information, which can be used in addition to e-mail (Raubenheimer 2012:27–28).

2.6 Interlibrary loan (ILL) services

In Section 2.2.3, the concept of interlibrary loan (ILL) was defined and in this section, ILL services are discussed. The primary purpose of ILL, which contributes positively to research (Raubenheimer 2014b:2), is to support research and teaching (University of Stellenbosch. Library and Information Service 2017; University of Pretoria Library 2019). ILL is used to obtain books and articles that are not available in the campus library by requesting them nationwide to satisfy the needs of postgraduate students and academic staff members (University of Johannesburg 2019; University of Pretoria Library 2019, UNISA Library 2019; Tshwane University of Technology. Library and Information Service 2019). An ILL service is only provided to library clients when the requested material is not in the library's collections, has gone missing, or is "on search." Libraries request an ILL for their clients, after which the item requested is shipped to the specific library for their students or staff members. Burk (2006:80) believes that certain factors – such as simplifying ILL loans for users and obtaining borrowed books for the users faster and cheaper – drive current ILL innovation.

Technology and resource sharing networks are the mechanisms that support libraries in simplifying interlibrary loans and delivering requested books to users quickly. In South Africa, the resource sharing network is known as the South African Interlending Scheme (SAIS) and it is hosted and controlled by the National Library of South Africa (National Library of South Africa 2012; Lor 2003:145). Journals are an exception, in that they may not be borrowed, but users can be supplied with copies of articles

(National Library of South Africa 2012). Document delivery systems such as WorldShare's Article Exchange are used to supply copies of journal articles.

The Circulation/Interlibrary Loan (C/ILL) application messages allow interlibrary loan systems to communicate directly with library circulation systems (National Information Standards Organisation (NISO)-Circulation Interchange Protocol 2002). The NISO Circulation Interchange Protocol (National Information Standards Organisation 2002) is a circulation control remote system that addresses the Direct Consortial Borrowing (DCB), Circulation/Interlibrary Loan (C/ILL) and the Self-Service Circulation (SSC) according to the NISO Circulation Interchange Protocol (Z39.83-2002) (National Information Standards Organisation 2002).

The NCIP protocol helps in handling interactions between circulation and interlibrary loans, such as notifications for pick-up, overdue notifications and "can be handled in the same way whether owned locally or borrowed from another agency" (National Information Standards Organisation 2002). The C/ILL application messages allow automated interlibrary loan systems to communicate directly with library circulations systems (National Standards Organisation [n.d.]).

Self-service circulation uses NCIP messages for authentication, financial transactions charges, renewals and returns and for creating change (National Standards Organisation 2002:2). NCIP was developed to address both the resource sharing and the self-service transaction according to the NISO Circulation Interchange Protocol (Z39.83-2002) (National Information Standards Organisation 2002:1).

Against this background, it can be concluded that interlibrary loan services have two components – i.e. borrowing and lending. Furthermore, these two components serve a different purpose in a document delivery system, which is borrowing from the user's campus and the lending of library material belonging to other libraries by librarians. Resource sharing activities in the form of interlibrary loans and document delivery are still extremely relevant in the 21st century.

Therefore, it is essential to investigate relevant policies and procedures to understand how these services are used. Six different interlibrary loan policies and procedures are in use at different universities and they will be compared and discussed as case studies.

The practices to be examined are those of six distance education university libraries and one contact university. The reason for examining these practices is to compare how established libraries worldwide differ from a large size academic library in South Africa, which has grown from a correspondence university library to a distance education library, then to an ODL library and an ODeL library. The selected libraries are those of the University of Nevada Reno (UNR), Athabasca University (AU), Open University, United Kingdom (UK), the Open University Malaysia (OUM) the University of Alberta (UofA) and Simon Fraser University (SFU) Library.

2.6.1 Interlibrary loan case study reviews

The case study reviews focus on the background information of the respective types of libraries; their collections, which serve as an indication of their importance in terms of resource sharing; whether the libraries practice resource sharing activities such as document delivery from their library collections; inter-library loan activities for materials not available in their collections; and technologies in support of resource sharing.

Table 2.1: Interlibrary loan case study reviews

INTERLIBRARY LOAN CASE STUDY REVIEWS				
Selected library	Background	Collections	Resource sharing	Use of ICTs
<p>1. The University of Nevada, Reno</p> <p>https://www.unr.edu (Accessed 25 October 2016).</p> <p>Open Access. https://guides.library.unr.edu/c.php?g=542361&p=3716174 (Accessed 06 October 2018)</p> <p>Scholarly Publishing & Open Access https://guides.library.unr.edu/c.php?g=542361&p=3716174(Accessed 06 October 2018)</p> <p>Directory of Open Access Journals (DOAJ) sponsored by EBSCO (2018) https://doaj.org/ (Accessed 06 October 2018)</p>	<p>The University of Nevada, Reno (UNR) was founded in 1874 as the State University of Nevada in Elko, and in 1885 it was moved from Elko to Reno (UNR 2015).</p> <p>The University offers online courses and distance education programmes and courses to students across the world.</p>	<p>Digital collections include digital, physical resources as well as born-digital materials.</p> <p>Consists of manuscripts, photographs, films, and other audiovisual materials and newspapers.</p> <p>Subscribes to databases such as <i>Academic Search Premier</i>, <i>Business Source Complete</i>, and <i>ERIC</i> (Education Resource Information Center) and more.</p> <p>Provides open access, which includes access to open access resources. Such as open access journals</p> <p>Institutional repositories such as <i>Academica-e</i>, <i>Addi</i>, <i>Artxiker</i>, and other databases with no authentication needed before use).</p>	<p>Resource sharing activities such as interlibrary loan activities for materials not available in their collections.</p>	<p>Technologies in support of resource sharing such as ILLiad.</p> <p>Internet-related communication services.</p>
<p>2. Athabasca University</p>	<p>Founded in 1970 as the first Canadian University specialising in online</p>	<p>Comprises both online and physical resources; over 150,000 books and audio-</p>	<p>Resource sharing activities as community borrowers</p>	<p>Technologies in support of resource sharing activities</p>

INTERLIBRARY LOAN CASE STUDY REVIEWS				
Selected library	Background	Collections	Resource sharing	Use of ICTs
<p>http://www.athabascau.ca/ (Accessed 18 October 2016).</p> <p>Athabasca University: Mission and Mandate.</p> <p>http://www.athabascau.ca/about/mission/ (Accessed 18 October 2016).</p> <p>Library and Scholarly Resources.</p> <p>http://library.athabascau.ca/OtherResources.html (Accessed 17 October 2016).</p>	<p>distance education; seeks to remove barriers to education and increase equal educational opportunities for adult learners worldwide.</p>	<p>visual items, more than 200,000 e-books and online access to approximately 65,000 journals.</p> <p>Provides access to open access resources such as <i>African Journals Online</i> in addition to subject databases and reference databases (http://library.athabascau.ca/OtherResources.html)</p> <p>An institutional repository is available.</p>	<p>may request ILL in person, by phone or email.</p>	<p>relate to the myAU portal to access online services.</p> <p>Online infrastructure which comprises an online catalogue and library services via the Internet and Intranet. Communication services are through video conferencing and online messaging through mobile devices.</p> <p>Single sign-on (SSO) allows users to authenticate access through the myAU portal.</p>
<p>3. Open University, United Kingdom (UK)</p> <p>http://www.open.ac.uk/ (Accessed 17 & 25 October 2016)</p>	<p>Established in 1969, the Open University is the first successful distance university in the world. Founded to apply communication technologies to quality education for people who did not find an opportunity to study at traditional universities.</p>	<p>Resources in hard and full-text format.</p> <p>Electronic books, electronic journals, conference papers, theses, and dissertations.</p> <p>Supports open access.</p> <p>An institutional repository is available.</p>	<p>Resource sharing activities such as interlibrary loan activities for materials not available in their collections</p> <p>Provides document delivery services from their collections.</p>	<p>University uses emerging technologies to make higher education available to all people globally, such as supportive personal tutors and social interactions with study groups through online conferencing.</p> <p>Technologies in support of resource sharing relate to an online catalogue and other access services via the Library website as well as relevant online</p>

INTERLIBRARY LOAN CASE STUDY REVIEWS				
Selected library	Background	Collections	Resource sharing	Use of ICTs
				communication services such as chat, email, and Skype (OU, 2016).
<p>4. Open University Malaysia</p> <p>http://www.oum.edu.my/ (Accessed 25 October 2016)</p> <p>OUM Digital Library Collection.</p> <p>http://www.oum.edu.my/index.php (Accessed 05 October 2016).</p> <p>Document Delivery Service Request Form. 2013.</p> <p>http://library.oum.edu.my/oumlib/dds_form (Accessed 5 October 2016)</p> <p>Open University Malaysia. 2013. <i>New Open Access Journal</i></p> <p>http://library.oum.edu.my/oumlib/content/getting-books-articles-from-other-libraries (Accessed 06 October 2018)</p>	<p>Established in 2000 and launched in 2002, this is a leading private ODL university.</p>	<p>Oriented to books and eBooks, subscribes to e-journals and e-theses/dissertations databases.</p> <p>An institutional repository is available.</p> <p>Supports open access.</p>	<p>Practices resource sharing-related activities since students request material by using the Library's DDS request form for items not available in the Tan Sri Abdullah Sanusi Digital Library.</p>	<p>Online catalogue</p> <p>Facebook.</p>
<p>5. University of Alberta</p> <p>https://www.ualberta.ca/</p>	<p>Public research university located in Edmonton, Alberta, Canada since 1908. Students enrolled at this</p>	<p>Electronic resources such as e-books and databases, such as <i>Academic Search Complete</i>, <i>EBSCO eBooks</i></p>	<p>Participates in a wide range of cooperative resource</p>	<p>Online catalogue and an EZproxy server configured for library resources.</p>

INTERLIBRARY LOAN CASE STUDY REVIEWS				
Selected library	Background	Collections	Resource sharing	Use of ICTs
(Accessed 05 October 2016).	<p>University reside in 130 countries around the world.</p> <p>The University serves both contact and distance learners.</p>	<p><i>Collection</i>, EBSCO Discovery Services (EDS); <i>ERIC</i>, <i>Journal STORage</i> (<i>JSTOR</i>), <i>Scopus</i> and the <i>Web of Science</i>.</p> <p>Supports open access.</p> <p>An institutional repository is available.</p>	<p>sharing activities to extend its collections.</p> <p>Document delivery/ILL is provided for articles and book chapters available in other libraries.</p> <p>Requested library material is delivered to the requestor's home.</p>	<p>An online form to be completed to report access problems.</p> <p>On or off-campus access via the library's website to its e-resources and electronic communication tools such as e-mail or Twitter.</p> <p>The link which allows quick authentication – this enables access to full-text information which users can install on their Web.</p> <p><i>Citation Linker</i> available at http://libraries.ucsd.edu/usin-g-citation-linker/tip-figure-1.gif enables the requestor to access full-text information.</p>
<p>6. Simon Fraser University</p> <p>https://www.sfu.ca/</p> <p>(Accessed 5 October 2016).</p>	<p>Ranked among Canada's top universities, SFU University, located in British Columbia, was opened in 1965 (SFU 2016) and offers national and international programmes and continuing studies programmes.</p>	<p>Subscribes to a vast number of journals, mostly online.</p> <p>Large book collection.</p> <p>Supports open access to scholarly information.</p> <p>An institutional repository is available.</p>	<p>DDS to provide access to materials not held in own collection</p> <p>Provides "delivery of University collections to Distance Education students."</p>	<p>Computers, laser printers, colour printers, scanners, and application software.</p> <p>Students connect with the Library via an online library catalogue and social media networks</p>

2.6.2 Interlibrary loan policies and procedures

According to the International Federation of Library Associations, (2015), it is crucial for libraries to avail ILL/DD policies and procedures in libraries and to develop ILL/DD policies, so that they “provide a firm foundation to offer a service” (Fraser, Dolabaille & Winter, 2011:241). These policies and procedures are the “framework” in which library users operate (Fraser, Dolabaille & Winter 2011:241). A good policy function is to provide the information needed to perform tasks and to ensure that users know what they need and what they can expect from the library (Nelson & Garcia 2003).

In the library environment, this refers to the “loan rules” of the relevant library that indicate who may borrow material; how many items can be borrowed; and which material can be borrowed and for how long. Interlibrary loan procedures are similar in almost all academic libraries, more especially to those who belong to the same memorandum of understanding. According to Rheiner (2008:380), “if a patron needs a journal article that is not owned by the library, he/she completes an interlibrary loan request.”

The interlibrary loan policies and procedures that have been developed to benefit resource sharing practices in academic libraries are captured in Table 2.2.

Table 2:2: Comparison of the ILL policies and procedures of six case study libraries

COMPARISON OF THE ILL POLICIES AND PROCEDURES IN THE SIX CASE STUDY LIBRARIES						
Selected library	Eligibility	ILL service provision restriction	Request method	Delivery method	Turnaround time	Mode of Communication
<p>1. The University of Nevada, Reno (UNR 2016)</p> <p>https://guides.library.unr.edu/interlibraryloan/DDSPolicies (Accessed 25 October 2016)</p>	<p>Staff and students (campus and distance education students; non-University of Nevada, Reno affiliated) faculty and staff; and community members use the service for a fee.</p>	<p>Provides distance learners with articles and books from their collection, meaning that document delivery is provided.</p> <p>Restrictions:</p> <p>Books from other libraries are not supplied to distance learners.</p> <p>Accurate citations relevant to the request must be submitted.</p> <p>The following may not be requested:</p> <p>Non-circulation materials; high use materials as they may not be available; rare, fragile, or precious items; audio-visual materials, reference materials, entire issues or volumes of periodicals; theses and dissertations (available online through <i>ProQuest Dissertations and Theses</i> on the library website).</p> <p>Entire issues or volumes of periodicals.</p>	<p>Various request methods for different user types, i.e., online requests via a commercialised online system known as ILLiad.</p> <p>Users who require physical assistance can consult document delivery services.</p> <p>Paper ILL request forms are used by non-UNR and Community members</p>	<p>ILLIAD system is used for the delivery of articles and delivered electronically to the UNR ILLiad Account.</p> <p>The material is delivered to pick up points/campus mail stops.</p> <p>Requested books are sent through the U.S. Postal Service and in the case of distance education services the books are returned in the same packaging at the student's expense and the parcels are insured. Requested items are returned in the same packaging, and the package is insured.</p>	<p>Requests received in one to two weeks; out of state libraries one to four (1-4) weeks; periodical articles one week; rush material 2-3 days.</p> <p>Distance education services: Requests for library-owned materials are processed within two working days</p>	<p>Email; mail</p>

COMPARISON OF THE ILL POLICIES AND PROCEDURES IN THE SIX CASE STUDY LIBRARIES

Selected library	Eligibility	ILL service provision restriction	Request method	Delivery method	Turnaround time	Mode of Communication
<p>2. Athabasca University (AU 2014)</p> <p>Interlibrary Loan.</p> <p>http://library.athabascau.ca/BorrowingPrivileges.html (Accessed 01 November 2018)</p>	<p>Students, faculty staff, subject matter experts, and coaches.</p>	<p>Provisions</p> <p>Copies of journal articles; book chapters, and conference proceedings.</p> <p>Restrictions</p> <p>AU library users consent to their use of their personal information for the library to provide them with Interlibrary Loan.</p> <p>Community borrowers must submit a citation.</p> <p>No requests permitted for audio-visual material; microform material; reference material; theses, government documents, conference proceedings; a complete journal issue.</p>	<p>Various request methods, i.e., in person, by phone or via email.</p>	<p>The physical door to door delivery of requested items with a pre-addressed mail card or label for the return of material.</p> <p>Online delivery of journal articles.</p> <p>Journal articles in the printed format are delivered via campus mail or to the specific pick-up points of the library.</p> <p>The material may be couriered to the user at their own expense.</p> <p>Pick up points at AU Edmonton or AU Calgary. Moreover, it may be returned to the Branches mentioned above.</p>	<p>Requests received in 7-10 working days. Items that are difficult to locate up to 6 weeks.</p>	<p>Phone, fax, email, mail or in person.</p>
<p>3. Open University, United Kingdom (UK)</p> <p>Document delivery and inter-library lending. 2018.</p> <p>http://www.open.ac.uk/library/services/document-delivery-and-inter-library-lending (Accessed 01 November 2018)</p>	<p>Students and staff.</p>	<p>Non-circulating material.</p> <p>Printed and audiovisual materials from modules are available for reference in the library building at Walton Hall Campus in Milton Keynes.</p>	<p>Library searches on the catalogue.</p> <p>Eligible users may request using the Society of College, National and University Libraries (SCONUL) Access allows other University libraries that belong to the same scheme to use or borrow books and</p>	<p>Online delivery.</p>	<p>Requests received in 7-10 working days. Items that are difficult to locate up to six weeks.</p>	<p>Website</p> <p>Youtube</p> <p>Facebook</p> <p>OU offers support to students by using the telephone, email or computer.</p>

COMPARISON OF THE ILL POLICIES AND PROCEDURES IN THE SIX CASE STUDY LIBRARIES						
Selected library	Eligibility	ILL service provision restriction	Request method	Delivery method	Turnaround time	Mode of Communication
			journals that belong to other libraries (SCONUL, 2017).			
<p>4. Open University Malaysia</p> <p>http://library.oum.edu.my/oumlib/announcements/20-11-2012/interlibrary-loan-policy</p> <p>(Accessed 26 October 2016).</p>	Students, faculty, and staff.	<p>Non-circulating material.</p> <p>Items published in a current calendar year; items owned by OUM (unless all copies are lost or missing). Items are available in Library Databases (Digital Content) (OUM, 2012).</p> <p>Ebooks and downloadable audio; reference (non-circulating materials); bound periodicals and magazines (OUM, 2012).</p>	<p>Request using the online form (ILL).</p> <p>Users are requested to search the Library first and to search databases before asking for ILL, and they should also confirm if not available.</p>	The administration fee is paid by community members.		<p>Catalogue</p> <p>Web</p> <p>Email</p>

COMPARISON OF THE ILL POLICIES AND PROCEDURES IN THE SIX CASE STUDY LIBRARIES

Selected library	Eligibility	ILL service provision restriction	Request method	Delivery method	Turnaround time	Mode of Communication
<p>5. University of Alberta (UofA 2015)</p> <p>Interlibrary Loan/Document Delivery.</p> <p>https://www.library.ualberta.ca/services/interlibrary-loan</p> <p>(Accessed 01 November 2018).</p>	<p>Students, staff, and faculty.</p>	<p>Provisions</p> <p>Any item is not available in the library system or on Google Scholar.</p> <p>Restrictions</p> <p>No available online material may be requested (students need to access online resources themselves).</p>	<p>The online catalogue is used to request library material.</p> <p>A reference number is provided for track and trace purposes.</p>	<p>ILLiad system is used.</p> <p>Adobe Acrobat Reader needed by clients so they can get articles online via the Electronic Received Articles function.</p> <p>Users are informed by email about the status of the request.</p>	<p>Same day delivery of all requested material.</p>	<p>Email</p>
<p>6. Simon Fraser (SFU 2018)</p> <p>Inter-Library Loans: Information for other libraries</p> <p>https://www.lib.sfu.ca/borrow/request-materials/ill/info-other-libraries</p> <p>(Accessed 01 November 2018).</p>	<p>Faculty members, staff, graduates, undergraduate students, emeriti and adjunct faculty members, and distance learners.</p>	<p>Provisions</p> <p>Full journal volume; DVDs or videos; rare and valuable books difficult or expensive to mail; reference material; recently published books.</p> <p>Restrictions</p> <p>Alumni and external borrower cardholders are not eligible for ILL.</p> <p>No telephonic requests.</p> <p>Users are requested to provide as much information as possible</p>	<p>The online catalogue is used to access and to request online.</p> <p>Single sign-on is used to enter their credentials and information to confirm eligibility.</p> <p>Complete form online to request articles.</p> <p>Users to check the SFU Library first before requesting ILL.</p>	<p>Online (secure Post to Web service).</p> <p>Books are mailed, and journal articles emailed.</p> <p>The door to door delivery of books by mail at no cost.</p> <p>Students indicate their pick-up location.</p> <p>Telebook delivery service is used by the library.</p> <p>Return items by mail prepaid.</p>	<p>1–3 days for journal articles.</p> <p>4–8 days for books.</p> <p>Fourteen days or longer for material outside Canada.</p>	<p>Email</p>

2.7 Evaluation of policies and the use of ICTs in six case study libraries

The literature review reveals that, similar to the UNISA Library in South Africa, all the selected libraries (100%) have policies to guide their service delivery in support of resource sharing-related activities and that these libraries have developed their library services through the use of technologies. In this regard they:

- Use an online library catalogue and provide access to information through different databases;
- Support open access and keep an institutional repository;
- Share information through electronic networks to provide ILL/document delivery services to library users;
- Deliver requested material from their collections to their library users;
- Library users use their usernames and passwords to access information from their libraries, so that they can be authenticated when they are on or off campus;
- Acknowledge faculty staff and students as eligible to use the ILL/document delivery services;
- Allow other members under certain circumstances to make use of the library services;
- Provide ILL services at no cost to individual members;
- Publish their ILL policy and related procedures on their websites; and
- Use automated ILL systems.

These libraries' policies differ regarding material that may not circulate, such as reference material, audio-visual and microform and a complete journal issue. Articles found in their full-text e-journal collections should not be requested, as they are accessible in full-text.

The discussion in this section, which focused on the library policy and procedures of ILL, reveals that efficient document delivery is vital to support teaching and learning and research endeavours in an academic environment. Since these services depend on the rapid distribution of information, the role of libraries has drastically changed, in that service providers should stay abreast of technological developments that can benefit the

service. The case studies reveal that other libraries are also using ICTs and have subscribed to valuable electronic resources to allow their users access to electronic services and electronic resources and that requests for information resources can be placed online to speed up the process. South African academic libraries have also adopted the trend in making sure that every student has access to information online 24/7.

Finally, the case studies also reveal that libraries have moved away from using hard copies only and also use electronic resources and that adequate infrastructure is needed for libraries and students to use and access ICTs. This implies that library users should have to acquire knowledge and skills to ensure that they can access the required information resources.

2.8 Chapter summary

The literature review in this chapter provided an overview of resource sharing and the importance of document delivery and ILL activities and processes, as well as the use of new resource sharing developments through open access, such as an institutional repository. The chapter focused on access to information sources that are owned and access to information sources that are not owned, but that are made accessible through resource sharing agreements and the use of related ICTs. These matters were then considered through an investigation of six case studies that focused on resource sharing activities, such as document delivery from libraries' own collections and inter-library loan activities for materials not available in their own collections; the related policies and procedures at the respective libraries, as well as the relevant ICTs in document delivery services. It also included details about the evolution of document delivery services through the use of ICTs and information that relates to the context of a South African ODL library. In this chapter, the literature study provided answers to questions that cover the document delivery concept and components of the research question. Chapter 3 investigates information literacy (IL), as it is suspected low IL skills influence the effective use of document delivery services.

CHAPTER 3: INFORMATION LITERACY (IL)

3.1 Introduction

The model of distance education in the 21st century is significantly different from that of correspondence education (Sacchanand 2002:2). These changes manifest in the online education model of which online distance learning forms part (Sacchanand 2002:2). As Arinto (2013:168) observes, “open universities and distance learning institutions have “shifted from a predominantly print-based mode of delivery to an online mode” of delivery. Developments in ICTs have contributed to this shift in delivery modes, as these developments made it so much easier for ODL institutions to reach remote students (Rammutloa 2017:3). ICTs are, therefore, crucial tools for the support and encouragement of independent learning (Wiyaka & Rukmini 2018:59).

Information literacy (IL) skills are perceived to be essential skills for the effective use of ICTs (Du Toit 2015:64). According to Lau (2006:8), IL has “evolved beyond early library instruction, and information skills-focused programs and the IL concept is now used to describe the process of information-seeking and information using competencies.” Lau (2006:8) further explains that the difference between library instruction and IL is reflected in the focus of each concept. – Library instruction emphasises the required skills and competencies that would support users to locate library material, such as information search strategies, information seeking and information use. This is in contrast to IL, which “focuses on information use rather than bibliographic skills” (Mwangi 2015:20).

This study focuses on the factors prohibiting students from accessing and using the library's document delivery services in an ODL environment effectively; the subsequent challenges of online access to information; requesting information from the library by means of an online request system; and the communication to the library through online systems, in order to speed up the delivery of requested information. In order to ensure that library clients are equipped with the knowledge and skills to use the respective systems, IL skills programmes need to be incorporated in an ODL library. The purpose of the literature review in this chapter is, therefore, to foster an understanding of IL and the

skills required to use document delivery services effectively. This aligns with the views of Moyane, Dube and Hoskins (2015:28), who observe that the primary purpose of libraries is the provision of relevant information resources to students for learning, teaching and research that, in order to deliver such a service, libraries need to empower students with the required knowledge and skills that would support them to become self-sufficient and independent lifelong learners.

Correia and Teixeira (2003:312) provide another reason for IL skills becoming increasingly important by observing, “in the creation of new knowledge; in personal, vocational and organisational development and to promote IL research and practice in contemporary society” in preparing for effective citizenship and personal growth. According to Johnson and Rader (2002:359), students are turning to the Web to find the information that would provide in their information needs.

The concept of information literacy emanated in the United States of America (USA) in the late seventies, and the IL skills movement developed at the beginning of the eighties in the United Kingdom (Behrens 1992:33 & 46; Chevillotte 2009). Behrens (1992:33) states that, although these two concepts (i.e. IL and IL skills) originated from different countries, they are similar. Various researchers and individual bodies indicate the need for and the importance of IL (American Library Association. Presidential Committee on Information Literacy 2006a & 1989; American Library Association 2000). Researchers such as Behrens (1992), Jiyane and Onyancha (2010), Esterhuizen and Kuhn (2010), Neerpath (2016), Onwuchekwa (2017) and Rantlha (2017) have indicated the need to attain the necessary level of IL and that it is a necessity for the academic success of students. Neerpath (2016:43) argues that academic libraries could become a “cohesive instructional partner in contributing to academic success.” However, Hart and Davis (2010:37), who express concerns about educators’ lack of confidence when teaching students IL skills, view this as a problem for the development of IL skills.

The use of ICTs in higher education has become crucial, particularly in the South African higher education context, where the success of distance education students is dependent

on the online accessibility of information resources. This view is supported by Raubenheimer (2014a:126; 2014b: 4; Raubenheimer 2010), who points out that the use of ICTs in the UNISA Library makes it possible to bridge the distance between students and the institution, while supporting service delivery to remote students. Raubenheimer (2014) reiterates that technologies are vital to distance learning, so as to ensure that distance learners receive the equitable provision of library resources. Sacchanand (2002) opines that ICTs also transform distance education in all its aspects. Mbambo-Thata (2010:468) alludes to the fact that the use of technology programmes in libraries needs to be assessed in terms of their impact on clients and internal operations, workflow and the perception of patterns.

According to Nwezeh (2010), ICTs are essential in an academic environment to ensure effective teaching, learning and research. Researchers such as Shillinglaw (2003:52); De Jager and Nassimbeni (2005); Nwezeh (2010); Moyane, Dube and Hoskins. (2015:28); Constable (2007:17); Ramasodi (2009:103); Raubenheimer and Van Niekerk (2015:77) and Rantlha (2017) also support the importance of technological changes in the learning environment in support of teaching and learning.

Coetzee (2012:305) stresses the fact that students need to improve their IL skills – mainly because they need to be able to log into the Web to access information that would provide for their information needs (Correia & Teixeira 2003:312). These views are supported by those of Desta (2016:3), namely that a lack of computer and IL skills affects the usage of online libraries. Dube (2017), Du Toit (2015:64), Gross and Lathan (2011:9), Ilogho and Nkiko (2014:3), Ngulube (2007:163) and Rantlha (2017) report similar findings. This implies that information literate students should be able to search, request and download information that would provide for their information needs. This will be required by UNISA Library users, as they have to use the Internet to access the online document delivery services to search, request and download the information they need in a variety of formats.

Document delivery services are indispensable to students and, therefore, librarians should promote these services during IL training. IL skills are also critical in instances where the library does not own a copy of the resource and the student needs to request information using ILL (Ramasodi 2009:39). Therefore, students should be made aware of what to do when the required information is not held by their library and that the door to access to that information is not closed because an item is not available in their library (Fraser, Dolabaille & Winter 2011:250). Schloman (2001) observes that "ICTs allow access to vast reservoirs of information" and observes that, if people knew how to capitalise on information reservoirs, their knowledge could make a difference in their lives. This means that students should be able to apply their knowledge and skills when using ICTs, in order to support them in locating and accessing online information and related delivery services. Students, who do not have these skills, require training if they are to fully benefit from the use of ICTs.

Against this background, an understanding of the IL concept needs to be acquired. Apart from defining IL to foster an understanding of the concept, and exploration of the concept is necessary, so as to ascertain how it impacts on the use of the DSS of an ODL library.

3.2 Defining information literacy

The concept of information literacy appears to be an "umbrella term" that encompasses concepts such as digital, visual and media literacies, academic literacy, information handling, information skills, data curation and data management (Moir & Stubbings 2011:3).

This view is enhanced by the numerous definitions of IL. For example, the Presidential Committee on Information Literacy of the American Library Association (1989:1) defines *information literacy* as "a set of abilities requiring individuals to recognise when information is needed and can locate, evaluate, and use the needed information effectively." Similarly, Callison and Preddy (2006) define *information literacy* as a "set of abilities that allow an individual to recognize when information is needed and apply those abilities to locate, evaluate, and effectively use the needed information." The definitions

proposed by Kinengyere (2007:329) and by Williams (2010:148) are similar those of the American Library Association. Presidential Committee on Information Literacy (1989:1) and Callison and Preddy (2006). Kinengyere (2007:329) defines *information literacy* as the “ability to identify an information need, locate and access the required information, evaluate, organize and apply it to address the need in question,” whereas Williams (2010:148) defines the concept as “the ability to recognize when information is needed and have the ability to locate, evaluate, and effectively use the needed information.”

When considering the foregoing definitions, it becomes evident that an information literate person should have the skills to enable them to recognise an information need and to locate, evaluate and use information. In addition to the identified skills, Gyimah (2011:4) also identified computer and library skills as being essential information skills that an information literate person should acquire. All in all, IL is regarded as a means of empowerment (American Library Association. Presidential Committee on Information Literacy 2006b).

According to these four definitions, the information literate person should be able to:

- Recognise an information need. Students have to recognise when information is needed (Williams 2010:152);
- Locate and access the required information. Williams (2010:152) suggested that not only is it necessary for students to recognise their information needs but also to know where to find it and be able to use their books and other reference material. The ability to locate and evaluate information, therefore, implies that users can independently search for and retrieve information that is relevant to their information needs, and consequently, they have a certain level of proficiency and self-sufficiency;
- use the Internet (Williams 2010:149);
- Distinguish between information resources and evaluate the information they provide (Moira & Stubbings 2011:19). Students should, therefore, be able to assess the information they have retrieved online before printing or saving it for their studies. Be able to extract and organise the retrieved information, integrate it into the existing body

of knowledge and be able to use the information for their own specific need (Bothma, Cosijn, Fourie & Penzhorn 2011:14);

- Have the ability to ethically organise and arrange information by citing sources using suitable referencing styles (Moira & Stubbings 2011:10). Examples of referencing styles are Harvard Referencing, American Psychological Association (APA), American Medical Association (AMA), Modern Language Association of America (MLA), and the Chicago referencing styles (University of Auckland Library 2018). The application of acceptable referencing styles will support users in the ethical use of information and help them to avoid plagiarism and to acknowledge intellectual property (Moira & Stubbings 2011:10).

For this study, the IL definition of Williams (2010:148) was adopted. This definition is particularly useful, because it defines IL within the ODL domain. Therefore, IL is discussed as the ability to recognise when information and training are needed to locate, evaluate, effectively use, and access information using personal computers or mobile devices which have an Internet connection. This definition then implies the user's ability to master library skills such as finding, evaluating and using library resources, which are taught during IL training sessions.

In the following sections, these aspects of IL skills will be explored.

3.3 Information literacy skills

Hornby, Ashby and Wehmeier (2000:1111) define the term *skills* as the ability to do well. When applied to IL and when considering Williams' (2010:148) definition, the concept of IL skills involves the ability to locate, evaluate and use library resources effectively. These skills require the user to identify knowledge gaps; recognise an information need; plan information searches; locate and access information; compare and evaluate information; organise information; apply information presentation skills; and synthesise and create new knowledge (Moira & Stubbings 2011:6–13). In her study, Du Toit (2015) identified the lack of IL skills as a factor affecting students' information search skills. Her findings endorse those of Byrne (2003:419), who states that users will not use information systems

effectively and efficiently if they do not have the necessary computer and IL skills. In turn, students who do have IL skills can recognise their information needs (Amusa, Bello, Omotoso & Osunrinade 2016:5).

The information skills identified by Amusa et al. (2016:5) are the same skills that can be deduced from the Association of College and Research Libraries' definition, which include the ability to recognise when information is needed, as well as the ability to locate, evaluate and use information efficiently. In turn, Farmer (2011:184) believes that information skills enable students to use technologies to achieve academic work-related and personal goals. As Selematsela (2005:44) suggests, IL skills instruction is required to ensure that students acquire these skills. According to her, IL skills instruction not only assists students in obtaining research skills but also "stimulates their intellectual curiosity." The required skills include knowledge of database structure and guidance that the student has as to their input into the computer when searching for information (Ray & Day 1998).

Based on the foregoing information, it is possible to identify the IL skills that need further exploration as relating to search skills, locating skills and information access skills.

3.3.1 Search skills

This discussion focuses on search skills that are more specifically required by university students operating in an ODL library. There are search strategies, known as *search techniques*, to be applied when searching for information on a particular research topic. In this regard, Seamans (2001:70) discovered that students lack experience in using Boolean operators, truncation and proximity operators to enhance their information searches in search engines and databases. As observed by Rosman, Mayer and Krampen (2016:25), searching bibliographic databases is a complex task that requires specific skills, such as knowing how to combine search terms by using the Boolean operators AND, OR and NOT, as well as how to truncate words by using wildcards (e.g. an asterisk (*) or a question mark (?)), in order to refine their information searches (Kimani 2014:15-16). As Rosman, Mayer and Krampen (2016:25) note, knowledge of Boolean

operators does not necessarily mean users have the skills and capacity to apply their understanding of Boolean operators when dealing with the type of search interfaces typically found in databases. As a result, they should be able to search for information in databases and to know the types of resources available in libraries (Kimani 2014:52). Searching skills are, therefore, vital for students and need to be acquired and practiced throughout their studies.

Based on her study, Conway (2011:132) notes that librarians and educators always assume that postgraduate students have already mastered the necessary IL skills. However, her findings show that both undergraduate and postgraduate students seem to experience problems, mainly when using traditional library tools such as the library catalogue. Ngulube (2010) found that students registered at the St Joseph's Theological Institute do not use information resources that available on the Internet. Valentine (1993:302) and Murphy (2014:6) found that students use strategies that make it easier for themselves to get information, in order to compensate for their lack of skills. Therefore, they first use Google and Wikipedia to access information and then move on to the library catalogue and databases. This is irrespective of their proficiency levels to locate information.

3.3.2 Locating skills

According to Eisenberg (2008:45), locating skills form one of the six pillars upon which IL rests and students, who have mastered this skill, can locate library information independently. The American Library Association (2000:2), Rafique (2014), Jacobson and Mark (2000:256), Tsui (2000:22), Hashim and Mokhtar (2012:153) and Dube (2017:23) note that users who have mastered location skills should also be able to recognise the actual collection to which the located information sources belong. Locating information also implies the ability to use the located information (Jacobson & Mark 2000:256; Tsui 2000:22). Students are required to distinguish between different library collections and, therefore, they need locating skills, so as to locate information and establish if what they have accessed actually forms part of the library collection (Dube 2017:23).

Locating information is a skill that the individual user needs to locate information quickly and successfully. However, the location of information does not happen in isolation; it goes together with the skill of accessing information (Eisenberg 2008:45).

3.3.3 Information access skills

Access to technologies and their functional capabilities are said to be necessary in the ODL environment (Liebenberg, Chetty, & Prinsloo 2012:2). The information and/or technology access skill entails the capability to access information by using ICTs for learning purposes. According to Ngulube (2010:45), students' access abilities are one of the factors that influence their use of the Internet. Ngulube (2010:46) also indicates that access to information is made possible when students have Internet knowledge. Furthermore, "limited access to the Internet can be attributed to systemic factors", rather than to other problems (Ngulube 2010:50). Various researchers assert that researchers tend to access academic material through the use of the Internet (Ngulube 2010:50; Dogruer, Eyyam & Menevis 2011). According to dela Pena-Bandalaria (2007:13), students need skills in and knowledge of how to use information and communication technologies. Also, they should receive sufficient training before embarking on particular technologies.

Electronic resources are provided to university students, making the process of access highly significant to them. As indicated in Section 2.3, access to information is possible through the use of the library catalogue; *WorldCat* or databases that provide bibliographic information or full-text information. Therefore, it is vital for libraries to support students with IL skills to access library material remotely. With this in mind, Ewing (2005:681; 2009:734) stresses the importance of self-service and self-access to information. The Association of College & Research Libraries (2000) also emphasises information access skills as essential for students to access the information they require for their studies.

In a study conducted by (Okello-obura 2011:41) at the Makerere University, access to library databases was reported to be a challenge for students. According to the American Library Association (2007) and the Presidential Committee on Information Literacy of the

American Library Association (2006a), all library students should be able to access library resources – regardless of whether the student accesses the information on or off campus. Unfortunately, as De Haan (2004:75–76) found, libraries have not been paying much attention to digital skills and digital competencies. Furthermore, as observed by Dube (2017:19), students do become “overwhelmed by the amount of information they can access online.” In view of the access that is provided by Telecentres, Ntetha (2010:38) stresses the need for ODL libraries to ensure that users have the required skills to access all types of information databases.

3.3.3.1 Access to communication

Access to communication is made possible by the use of the Internet when accessing communication tools such as e-mail, blogs and wikis, to mention a few (Ngulube 2010:46). Students use “information and communication technologies (ICTs) tools to access networked sources” (Ngulube 2010:47). Electronic reference services (e-Reference) involving emails and chat services, make library reference services more accessible to remote students by providing flexible, 24/7 online support (Russell 2008). Russell (2008) also mentions that Web-based IL tutorials, such as streaming videos and audio IL tutorials, could be utilised to support off-campus students. It is through such technological advances that ODL libraries can take advantage of the opportunities offered by ICTs to provide synchronous and asynchronous IL instruction (Russell 2008).

3.3.3.2 Access for people with disabilities

Students with disabilities have particular challenges accessing information. However, the Association of College and Research Libraries (2002) stipulates that access to appropriate library services and resources should also be provided to disabled students – regardless of where these library users are located. A lack of support for students with a disability/disabilities could exclude them from academia. Furthermore, providing equitable services is an ODL principle (Tugli, Zungu, Ramakuella & Anyanwu 2013:346).

3.3.3.4 Access skills for remote students

If students are information literate, they have the necessary skills to become lifelong learners (Okpala, Benneh, Sefu & Kalule 2017:178). Various researchers are of the opinion that students need IL skills, in order to recognise their information needs to locate

and access information resources independently (Dube 2017; Rantlha 2017). However, as it has been observed by Chipeta (2010:25), students do lack the necessary skills to access library resources (some of which are difficult to use), which impedes their access to information and, ultimately, compromises their learning and research. In Rantlha's study (2017), it was found that 53.22% of the total number of students had never accessed the UNISA Library website (Rantlha 2017:105). Remote students, who do not access the Library website, are challenged, as the UNISA libraries place information skills training resources and notices on the website to raise an awareness of library services and other resources.

Furthermore, some remote students can only use their smartphones or tablets to access to information. With this in mind, Raubenheimer (2010) and Sheikh and Tin (2010:94) highlight the importance of being able to access information while using mobile technologies. Mobile access to library websites enables libraries to communicate with students better (Sheikh & Tin, 2010:86). The Open University (OU) in the UK and the Athabasca University (AU) also use mobile phones to access electronic resources, e.g. iPhones and Android handsets (Sheikh & Tin 2010:87). Raubenheimer (2010) confirms that the UNISA Library offers similar mobi-friendly access to the Library's services. Ferreira and Venter (2006:10) also note that the use of cell phones is essential for distance students and, therefore, skills in using such tools are equally necessary.

3.4 IL-related factors affecting document delivery services

Various studies – such as those conducted by Fourie and Ten Krooden (1999), Ramasodi (2009:3), Ngulube (2010:56), McPherson (2015:317), Rantlha (2017:8) and Dube (2017:19) – highlight factors that impede on document delivery services to students when it comes to locating and accessing library resources. In order to overcome the problem of access to information resources due to a lack of IL skills, students resort to the use of postal delivery services to receive their requested material, rather than self-service (Ramasodi 2009:3). Students' ability to find, evaluate and perform certain tasks should enable them to function effectively at finding information (Bothma et al. 2011:11). Students' IL abilities will assist them to be successful in their university studies and in

their social and work life (Bothma et al. 2011:12). The following factors are said to have a negative impact on accessing information: the lack of prior learning, library staff skills, geographical distance, library searching skills, library anxiety and library navigation skills. These factors are addressed in the following sections.

3.4.1 Prior learning

Recognition of prior learning (RPL) refers to various skills acquired by an individual outside the formal education and training system, such as competencies and experiences gained by students' lived experiences (UNISA. Directorate: Instructional Support and Services 2018). Underwood (2003:49) alludes to the reality that learning does not only involve a formal education experience, but also the experience gained through non-formal settings.

Fourie and Ten Krooden (1999) observe that prior knowledge is a factor affecting IL skills. They found that students who have had little exposure to libraries and information resources have a problem with mastering research information skills. As established by Fourie and Ten Krooden (1999), another contributing factor to the problem is that some students, who do not have the required skills, do not see the need for training. The willingness to attend IL training is reported to be a challenge. As Ramasodi (2009:99) has found, these students request that library material be posted to them, resulting in them receiving their requested material much more slowly. There are two reasons for this problem – Firstly, the UNISA Library can receive as many as 2000 requests per day (Raubenheimer 2014a:126) and, although the library has set service standards for the filing of requests, there may be delays caused by unforeseen circumstances. Secondly, when considering the number of postal service strikes occurring every year at the South African Post Office (SAPO), the delays in the delivery of requested information may be longer. The negative effect of postal strikes on document delivery services to students was confirmed by the studies conducted by Dube (2017:102) and Ramasodi (2009:99).

Fourie and Ten Krooden (1999) further stress that students who have had little exposure to library skills should attend training that is offered by libraries, even if they are enrolled

for advanced degrees. Continuous training is particularly important to those who are left behind due to their lack of prior learning skills. The relevant training programmes should, therefore, not only focus on teaching new skills, such as those relating to the use of ICTs, but also on the basic skills, as alluded to by Ferreira and Venter (2006:2), when they state that ICTs could “bridge old and new learning.”

3.4.2 Skills of library staff

According to Loackhart and Majal (2012), library staff training is a “crucial element in ensuring a positive user experience within libraries.” Staff members are the most valuable resource in organisations (Conner 2009) and, as Loackhart and Majal (2012), point out, the positive impact of staff training and development should not be underestimated. Dube (2017:6) indicates that skilled librarians are capable of ensuring that library resources are speedily processed.

Library training is a prerequisite for those processing students’ library requests (Dube 2017:6). Continuous IL skills are, therefore, necessary for all librarians processing requests in libraries – particularly when searching library databases.

3.4.3 Geographical distance

Geographical distance presents remote students with a challenge. Gumbo (2016:11) indicates that remote students find it challenging to attend face-to-face learning due to work-related or family responsibilities. Furthermore, Moore (1993:22) notes that time separation is also a challenge for students. As a result of these reported issues, it will not be easy to provide group training for distance learners, if the training requires face-to-face instruction at the library. Therefore, ODL libraries should not forget the element of distance in their purpose and goals for helping such students.

3.4.4 Library searching skills

Proficiency in searching the library’s electronic resources is vital in the ODL environment and should be updated continuously. Ngulube (2007 & 2010:56–57) reports on the challenges relating to computer accessibility, an inadequate number of computers, information technology infrastructure and IL skills that prevented users from

accessing information resources in libraries. According to Rantlha (2017:8), students who live in regions lacking technology infrastructures, cannot keep up with technological changes and are unable to use new technologies. She further indicates that even those who may be techno-abled as they have access to computers, may lack the skills to search electronic databases (Rantlha 2017:8). Inadequate IL skills act as a barrier to information access, as students without adequate IL skills may be able to apply basic information searching techniques, but still struggle to search the subscription library databases (Rantlha 2017:8).

3.4.5 Library anxiety

Library anxiety is a significant factor that not only affects the development of IL skills, but is also a contributing factor to poor academic performance, which, when added to the students' world and institutional factors, may trigger library anxiety (McPherson 2015:317). Specific personal factors that cause library anxiety are a lack of skills, lack of previous experience and ignorance in using library systems. According to McPherson (2015:318), "unfamiliarity with computerised catalogues and databases appears to be a recurrent challenge for students as OPACs and databases often have different interfaces, and some of them are difficult to manoeuvre."

As observed by Blazer (2011), anxiety is regarded as a negative emotion that interferes with problem-solving. Lawless (2011:17) is also of the opinion that a lack of knowledge or self-confidence is a factor that hinders the practical use of the library. Anxiety could prevent students from continuing with their studies, which may have a domino effect and cause vulnerable students to drop out (Asikhia & Mohangi 2015:6548). Anxiety limits students' opportunities to develop the necessary skills they need (Collins & Veal 2004:6; Selematsela 2005:32) and such challenges may also cause stress for students (Asikhia & Mohangi 2015:6548).

3.4.6 Navigation skills

Navigation, according to the *Cambridge Dictionary* (2019), is the "act of moving around or between websites, web pages, and screens." Rudasill (2015:15) observes that,

although students know how to navigate the Web and to subscribe databases hosted on the Web, they still need assistance when navigating databases, catalogues and archives. Some students, who lack navigation skills when using eBooks, prefer hard/printed copies (Gregory 2008:267). Onyancha (2018) assert that academic librarians should support researchers in finding their research related information and metrics needs in their libraries. However, Makondo and Akakandelwa (2009:16) allude to the fact that librarians lack adequate skills to navigate information, which, in turn, contributes to a lack of capacity among qualified librarians. The lack of skills may create problems for the academic libraries, because staff may not be able to understand new technologies or programs (Mogiba 2018:46). Students need navigation skills to access information resources, because the number of online resources is increasing significantly (Tshuma & Chigada 2018). Onyancha (2018) opines that there is a need for the re-skilling of academic librarians and other researchers in finding relevant information for their research projects. Therefore navigating skills is needed and is necessary in the 21st century and future of distance learning.

3.5 Information literacy programme

Researchers such as Behrens (1992), Jiyane and Onyancha (2010), Mugwisi (2015), Moyane, Dube and Hoskins (2015), and Rantlha (2017) highlight the critical roles of library literacy programmes. Technology has altered almost everything in higher education, e.g. the way people live, learn and work, as well as the way researchers conduct research are now influenced by or are reliant on technology (Gregorian 2002:5). The evolution of ICTs has been highlighted by Sacchanand (2002:2), Lau (2006:8) and Rantlha (2017:8). These changes require libraries to alter the way in which they offer user education.

Becker, Hartle and Mhlauli (2017:15) and Mnkeni-Saurombe (2015:163) believe that there is a need to transform ODL IL training and to deliver additional instruction to students. Rantlha (2017:14) supports this view by stating that IL and the use of ICTs are related and one cannot talk about the one without speaking about the other. Furthermore, Rantlha (2017:15) indicates that web-based IL instruction could enable learners to learn

by themselves, meaning that they will be able to learn anywhere and at anytime. Rantlha (2017) furthermore stresses the importance of implementing online training programmes for distance learners in academic libraries.

Other researchers explain the importance of IL programmes by stating that the purpose of IL training to students is to empower them to access and select relevant material and to make effective use of their library's resources (Jiyane & Onyancha 2010:11). Students need a change of attitude to such training programmes, as failing to participate in them has a negative impact on their access to information and, thereby, to their scholarly success (Ray & Day 1998; Fourie & Ten Krooden 1999:389).

Jiyane and Onyancha (2010:11) point out that library programmes are known by different names in different libraries. Mohsenzadeh and Isfandyari-Moghaddam (2009:988) indicate that typical IL programmes include training on the use of e-books, e-journals, e-resources, e-theses and dissertations and library catalogues.

According to Behrens (1992:26), library catalogue skills are vital for the selection of information sources in libraries. Therefore, all students require knowledge of the library catalogue, so as to find their library resources. Jiyane and Onyancha (2010:11) indicate that the library should offer computer orientation to their new students to enable them to appreciate the use of computers generally and, after that, educate them on how to search for information via the library catalogue.

IL programmes offered by most academic libraries in South Africa and by the UNISA Library, in particular, include: *Introduction to UNISA Library Services and Procedures; The Library Catalogue; An Introduction to e-Resources; Using Reference Sources; and An Introduction to Reference Techniques* (UNISA Library 2018b). The UNISA Library (2018b) also provides Master's and doctoral students with training on a programme named *The use of reference management tools*, which trains students in the use of *Mendeley, RefWorks* and *Endnote*. These tools and their features save researchers time in the management of in-text and bibliographic references. However, researchers need

intensive support in the use of these tools, and a lack of knowledge of these time-saving resources may actually disadvantage them. According to Mugwisi (2015:34), Zimbabwean libraries offer training on ethical research issues such as plagiarism. This includes training on the economic, social and legal aspects of information use and referencing techniques. This practice is one of the important areas for training identified by (Bothma et al. 2011:130 & 131), Wessels (2013:101) and Nel (2015:3) to help students learn what copyright infringement and plagiarism are and how to avoid it.

Similar to the comparative review in Chapter 2, this chapter is also concluded by a comparative review of the IL programmes provided by the selected libraries, in order to indicate how these libraries support their students in developing their IL skills. Table 3.1 contains the relevant details about the selected libraries; the programmes they offer; the names of the relevant programmes; and whether the mode of delivery is online.

Table 3.1: Comparison of information literacy programmes

COMPARISON OF INFORMATION LITERACY PROGRAMMES		
Selected library	Programme offered	Online delivery method
1. The University of Nevada, Reno (University of Nevada, Reno, Library 2018) Workshops: UNR Libraries https://guides.library.unr.edu/workshops (Accessed 23 September 2018). Services for Faculty. https://guides.library.unr.edu/services-for-faculty/your-subject-librarian (Accessed 03 November 2018) Services for Faculty. https://guides.library.unr.edu/services-	<ul style="list-style-type: none"> • Advanced searching techniques • Citation Management: Mendeley, Endnote, and Zotero • Data Management • Copyright • Developing an Online Scholarly profile, for example (ORCID and others) • Patents and Trademarks, searching for historical patents and trademarks • Library Makerspace Tools • Geographic Information Systems (GIS) – how GIS software can be utilised • Systematic Reviews: training covers the basics of a systematic review, including study types and methodologies • Professional Posters and Presentations (learning design and production of professional posters and presentations) • Accessibility - individual with disabilities do have access to the library 	LibGuide

COMPARISON OF INFORMATION LITERACY PROGRAMMES		
Selected library	Programme offered	Online delivery method
<p>for-faculty/support-for-classes</p> <p>(Accessed 03 November 2018)</p> <p>Teaching & Learning Technologies: TLT Workshop Signup</p> <p>https://guides.library.unr.edu/TLT/tlt-workshops/</p> <p>(Accessed 03 November 2018)</p> <p>Accessibility & Technology</p> <p>https://www.unr.edu/accessibility</p> <p>(Accessed 23 November 2018).</p>		
<p>Athabasca University</p> <p>(Athabasca University Library, 2018)</p> <p>http://library.athabasca.ca/orientations.html</p> <p>(Accessed 27 September 2018).</p>	<ul style="list-style-type: none"> • Library orientation; “basics of the academic research process; navigating the library’s resources” (Athabasca library (2018).; writing, citing and research • Citation management integrity; Zotero and Mendeley citation management tools • Academic integrity • Open access • Internet searching • Searching for Google Scholar • Wikipedia and academic research • Writing a literature review 	<p>Webinars & recorded Webinars</p>
<p>3. Open University, United Kingdom (UK) (The Open University, 2018)</p> <p>http://www.open.ac.uk/library/help-and-support/training-and-skills</p> <p>(Accessed 27 September 2018)</p> <p>Training and skills. 2018</p> <p>http://www.open.ac.uk/library/help-and-support/training-and-skills</p> <p>(Accessed 22 October 2018)</p> <p>Understanding databases. 2018.</p>	<ul style="list-style-type: none"> • Introduction to library services • Using library search for your assignment • Improving your experience accessing online resources • The why and how of referencing • Smarter searching with library databases • New library Search Q & A session • Finding resources for your assignment • Understanding databases • Understanding articles • Finding and using books and theses • Access e-resources using Google Scholar • Referencing and plagiarism 	<p>Live online</p> <p>Live sessions</p> <p>Recordings</p> <p>Audio</p> <p>Chat with a librarian</p>

COMPARISON OF INFORMATION LITERACY PROGRAMMES		
Selected library	Programme offered	Online delivery method
http://www.open.ac.uk/library/help-and-support/understanding-databases (Accessed 22 October 2018)		
4. Open University Malaysia https://www.slideshare.net/oumlib/presentations (viewed 27 September 2018) TSDASDL VIDEO Guides.2018. https://www.youtube.com/user/TSDASDL (Accessed 27 September 2018).	<ul style="list-style-type: none"> • Online databases - via presentations, videos, infographics, and documents • OPAC Guide • Guide to searching for books • Guide to searching for different databases (<i>ProQuest Theses and Dissertations, Emerald</i> [Eng]) • Usage Guide on <i>Academic Search Premier</i> 	Online Guides @ SlideShare Video Guides @ YouTube
5. University of Alberta (UofA 2015) (the University of Alberta Libraries, n.d.) https://www.library.ualberta.ca/tutorials/ (Accessed 24 September 2018).	<ul style="list-style-type: none"> • Foundational Tutorials: Questioning, Planning, Gathering, Sorting and Sifting, Synthesising and Evaluating • Research Computing Bootcamp • Research Tools • Introduction to cloud computing • High-Performance Computing (HPC) Carpentry: Shell • Library orientation • Preventing plagiarism and library anxiety • Understanding copyright and distance education 	Online tutorials
6. Simon Fraser (SFU Library, 2018) https://www.lib.sfu.ca/about/branches-depts/rc/services/workshops (Accessed 27 September 2018). Instructional services: IL & research skills. 2018. https://www.lib.sfu.ca/about/overview/services-you/instructional-services (Accessed 24 September 2018).	<ul style="list-style-type: none"> • Plagiarism Tutorial • Library Research Skills • Beyond the Basics: Library Research Skills Tutorial (2) • Copyright • Introduction to scholarly publishing • Cite your sources easier and faster with Zotero • The Nuts and Bolts of NVivo for windows • How to publish with IEEE • Managing Procrastination • Thesis Template and Resources • Research Ethics: Ethics Principles and Institutional Requirements • Find Data / Share Data • Preparing to publish • More information about training workshops are available online on the SFU calendar 	Videos, text and quizzes

COMPARISON OF INFORMATION LITERACY PROGRAMMES		
Selected library	Programme offered	Online delivery method
Workshops calendar https://www.lib.sfu.ca/about/reach-us/news-events/workshops/calendar/2018-10 (Accessed 24 September 2018).		

3.6 Evaluation of information literacy programmes

The discussion in this section focused on the library training skills that are available in different academic libraries and revealed that library training is vital to support teaching and learning and research endeavours in the academic environment. The comparison outlined in Table 3.1 shows that, similar to the UNISA Library, the various IL and library-related programmes described on the selected university websites reveal that the selected libraries offer IL and library-related training.

Since this type of library training depends on the librarians' capacity to offer such training, it is essential, firstly, that they have the necessary technology available to develop and communicate supportive training material and to reach distance learners. Secondly, librarians themselves need to be skilled and to stay abreast of the relevant technological developments that may benefit remote students. Similar to the UNISA Library, also use library-training skills to develop faculty and student capabilities in their libraries. All South African academic libraries have adopted this trend to ensure that students are given priority to be trained in the independent use of the library.

The comparison in Table 3.1 also reveals that libraries have moved away from using on-campus library instruction only, and have transformed their library training to support all students by using digital means to support the development of digital literacy skills. They do not use hard copies only, but also use their electronic resources and they have adequate ICT infrastructures for the librarians and students to put their IL skills to good

use. This implies that library users have to acquire knowledge and skills to ensure that they can access the required information resources.

3.7 Chapter summary

This chapter focused on the importance of IL in an ODL learning environment and explained why IL skills are required to ensure that students search for information correctly, in order to find, locate and access the required library resources to satisfy their information needs. The various factors that seem to interfere with online access to library material were pointed out. The literature review in this chapter provided an overview of IL learning and its importance in using library resources when delivering document delivery services, particularly in an ODL environment.

Chapter 3 is the last chapter in the literature review research that serves as the theoretical backdrop for the empirical research involved this study, which will further address issues identified in the literature study. Chapter 4 will focus on the research methodology and design used in the empirical research, covering the second phase of the research process.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

This chapter describes the research methodology underpinning the research process and highlights the research paradigm, research design, target population, sampling method, data collection process and the statistical data analysis techniques that were employed in this study. In terms of the title of this study, three of the objectives were to determine the nature of the statistical relationship between the use of ICTs and communication services in the UNISA Library; the use of ICTs and document delivery; and the uses of ICTs, the DDS and access to information. The fourth objective was to determine if the level of computer literacy (computer literacy skills and IL skills) predicts the effective use of communication services, document delivery services and access to information.

With these objectives in mind, Chapter 4 focuses on the research methodology of the study, which covers the second phase of the research process. The distinct stages that characterise the transition from the problem statement to the collection of data are conceptualisation and operationalisation. The conceptualisation of this research is reflected in Chapters 2 and 3, which focus on determining the theoretical constructs, while the operationalisation is embedded in empirical research, which is described in this chapter. The research design of the study indicates the type of study to be conducted to resolve the research problem through an understanding of the relationships between ICTs and certain ODL library services that relate to document delivery.

This chapter commences with a brief overview of the study's connection to science and meta-theoretical traditions, in order to determine an applicable methodology for this study.

4.2 Research paradigm and methodology

4.2.1 Research paradigm

It is important to notice no scientific research can be conducted without a philosophical paradigm (Tuseku 2014). Creswell (2014:6) points out that, in the planning of a study, a

student should think through the philosophical worldview of assumptions that they bring to the study, the research design related to this worldview and the specific methods or research procedures that translate the approach into practice, as these will then allow them to justify the use of quantitative, qualitative or mixed methods approach in their studies. According to Guba (1990:17), worldview means "a basic set of beliefs that guide action." Other scholars, like Gray (2005:399) and Bryman (2012:714), use the term *worldview* interchangeably with terms such as *ontology*, *epistemology* and *paradigm* (Creswell 2014).

In this study, the researcher interprets the term *worldview* as a set of beliefs and embraces the following definition of a worldview, as explained by Creswell (2014): "A worldview is a general philosophical orientation about the world and the nature of research that a researcher brings to a study, based on discipline orientations, students' advisors/mentors inclinations, and past research experiences".

Ngulube (2016) also alludes to the respective methodological approaches and their associated worldviews, namely that the methodology related to positivism is quantitative; the methodology related to interpretivism is associated with a qualitative approach; and that mixed methods research is related to a multi-paradigm, as it applies both the positivist and interpretivist paradigms. The research paradigm involves the main worldviews of positivism, post-positivism, constructivism, transformative and pragmatism (Creswell & Creswell 2018:6). Research also has a transformative worldview, which is held by a researcher who feels that a post-positivist paradigm has imposed laws or theories that do not fit to marginalised individuals in the society (Creswell & Creswell 2018:9). Positivism will be employed in this study.

4.2.2 Research approach

According to Creswell (2014:4), the difference between the quantitative and qualitative approaches must be understood as it impacts on the study's research design.

4.2.2.1 Qualitative approach

A qualitative research approach refers to an approach that explores and endeavours to understand the meaning that individuals or groups ascribe to a social or human problem (Creswell 2014:4). The qualitative approach involves queries and procedures for collecting data in the natural setting of participants. According to Creswell (2014:4), a qualitative approach implies that data analysis is "inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data."

4.2.2.2 Quantitative approach

A quantitative research approach involves testing the objectivity of theories and it examines relationships between variables (Creswell 2014:4). Quantitative studies usually measure variables with numbers (Ndlovu 2017:105) and deal with quantifying and analysing variables, in order to obtain results (Apuke 2017:41). Quantitative research methods include survey research, correlational research, experimental research and causal-comparative research (Apuke 2017:40).

In this study, positivism is the philosophical worldview underpinning the entire process of the research, since the aim of the study is to capture the perceived experience of students through numerical data and analyses. The recording of quantities or numbers that can be processed by using statistical techniques will ultimately reflect reality. Therefore, this study uses a quantitative research approach.

4.2.3 Survey research design

Research designs have research plans and procedures that cover broad assumptions to detailed methods of data collection and analysis (Creswell 2009:232). A research design can, therefore, be regarded as the blueprint of the way in which researcher intends to conduct research (Babbie & Mouton 2001:74; Cooper & Schindler 2011:18). According to Kumar (2014:122), the research design is a plan to find answers to the research questions validly, objectively, accurately and economically.

There is a number of critical issues that should be considered when planning the research design (Kumar 2014:123). These issues include how communication with others

regarding the proposed plan will be done; how information from respondents will be collected; how the respondents will be sampled; how the collected data will be analysed; and how the findings will be disseminated (Kumar 2014:123).

In this study, which is based on a quantitative research approach, the survey research was used, which enabled the researcher to collect data from a widely spread population in a short period. Such a design is described by Creswell (2014) and (Ngulube 2016) as ideal in the case where a large population should be reached.

According to Judd and Kidder (1991:519), survey research is a strategy for collecting data from all or a part of a population to determine variables of relative appearance, distribution and interrelationship. Survey research requires a large population large enough to represent the entire population (Ponto 2015). Creswell (2014:13) and (Creswell & Creswell 2018:147) explain that a survey design provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population. Survey research is said to be flexible, less demanding and more comfortable to conduct than other types of research (Leedy & Ormrod 2010:187).

4.2.4 The questionnaire as data collection method

According to Neuwman (2006 & 2013), a questionnaire survey is one of the most widely used research methodologies in social sciences, and it is also usually applied in academic research. For McMillan and Schumacher (2001:257), a questionnaire is the most comprehensive technique used for gaining information relevant to the researcher's subject of inquiry. Neuwman (2013:214) and Mafenya (2016:125) suggest that a survey questionnaire is fast and economical and ensures the participant's anonymity. However, some disadvantages are reported to be a challenge to web-based surveys, namely unequal Internet access or usage; the lack of reliable Internet access by respondents in rural areas; and respondents having multiple emails addresses (Neuwman 2013:215).

This study falls within the domain of the social sciences and its findings may be used as a reference for further research. A researcher-designed questionnaire was, subsequently,

used to collect information on the use of ICTs, document delivery and how IL affects the use of document delivery. The instrument measures skills and knowledge, perceptions, and opinions about the use of ICTs in finding library e-information resources through electronic services delivered by the respective UNISA Library branch libraries.

The survey research was conducted by means of a questionnaire, which will be discussed in Section 4.5.

4.3 Target population

LoBiondo-Wood and Haber (2006:583; 2010:581; 2014) define a research *population* as a “well-defined set that has certain specified properties.” The population is the “entire set of individuals or other entities to which the study findings are to be generated” (Chambliss & Schutt 2013:85). The target population of this study was the Master’s students of UNISA who were registered for a degree in the CEDU in 2017 and it involved a total 673 students.

4.4 Sampling method

A *sample* is described as a subset of units from a given population (LoBiondo-Wood & Haber 2006:585; 2010:582; Carpenter 2017) and *sampling* is the process of systematically selecting cases to be included in a study to extract a representation of the population (Tredoux & Durrheim 2013; Carpenter 2017).

A non-probability convenience sampling method was used in this study. According to Dudovskiy (2017), *convenience sampling* is also known as “availability sampling and a specific type of non-probability sampling method.” Dudovskiy (2017) also mentions that convenience sampling relies on data collected from a population that is conveniently available to participate in a study. Similarly, Fullwood and Rowley (2017) indicate that convenience sampling is based on the availability and accessibility of participants while convenient.

The main reasons for selecting the convenience sampling method for this study are that it provides easy access to participants; involves a low cost; and is less time consuming,

as it can reach a massive population in a short time. It is reported to be the easiest and most convenient sampling method (Dudovskiy 2017).

The population of the study consisted of 673 Master’s students registered at the CEDU. Of the total target of 673 Master’s students, 117 participants (17.3%) responded to the email invitation to participate in the research by indicating their willingness to participate. Of these 117, only 107 participants (15.8 %) actually submitted responses that were usable for the study.

Table 4.1 provides the details about the respective degrees for which the the participants were enrolled.

Table 4.1: Qualifications of participating Master’s students

QUALIFICATIONS OF PARTICIPATING MASTER’S STUDENTS	
Qualification	Number
Master of Education in Adult Education	8
Master of Education Curriculum Studies	16
Master of Education Management	26
Master of Environmental Education	5
Master Education in Mathematics	7
Master of Education in Natural Sciences	6
Master of Inclusive Education	17
Master of Open Distance Learning	6
Master of Philosophy	1
Master of Psychology of Education	9
Master of Socio-Education	3
Master of Education, specialising in Curriculum Studies	2
Master of Education, specialising in Environmental Education	1
Total	107

Figure 4.1 depicts the participants’ different fields of study in the CEDU and the percentage per field of study.

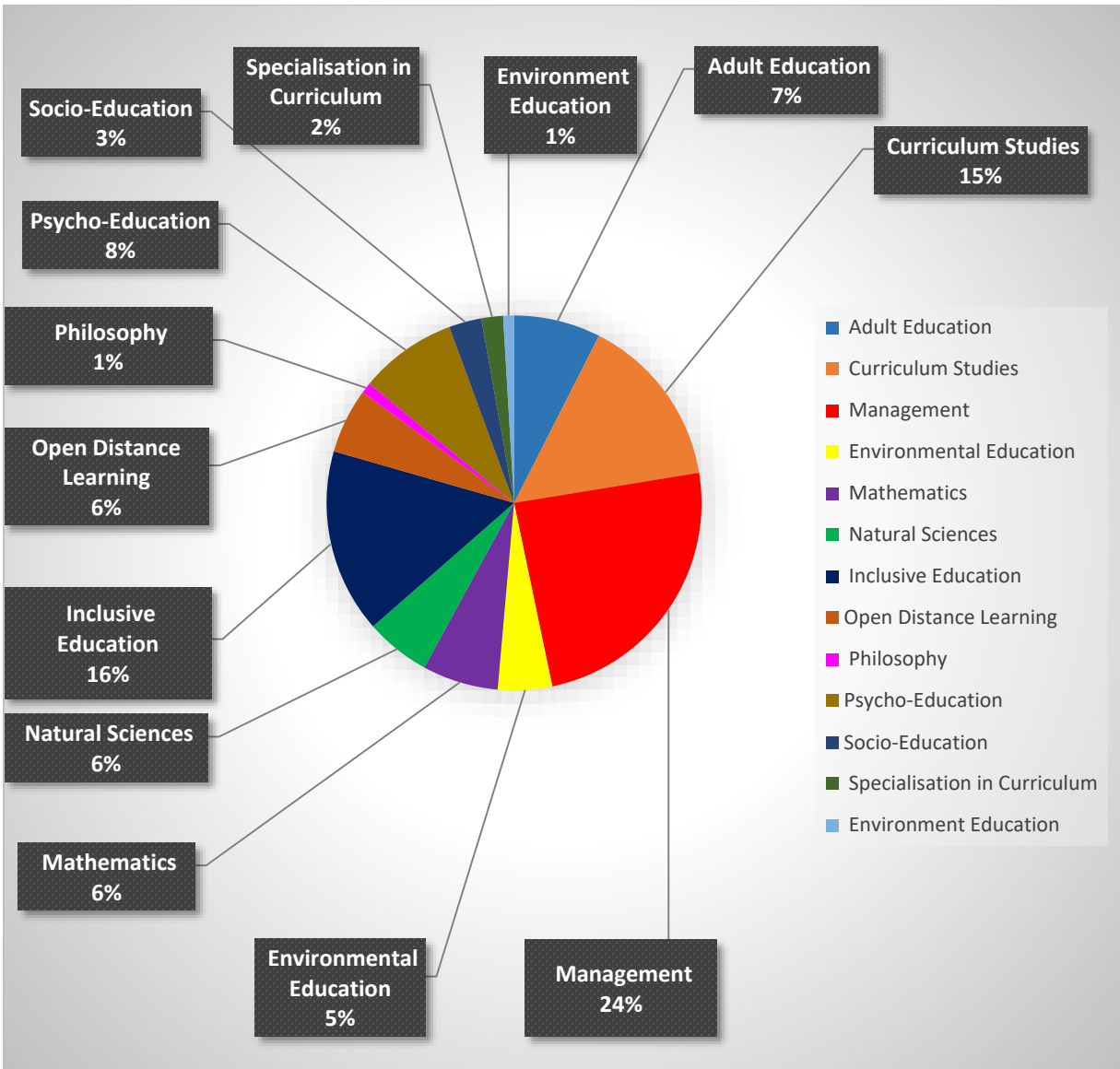


Figure 4.1: Participant representation of fields of study

4.5 Data collection and administration of the questionnaire

As indicated in Section 4.2.4, the survey was conducted by collecting data by means of a questionnaire.

4.5.1 Questionnaire design and layout

The design of the questionnaire was done according to guidelines provided by Ruel, William and Gillespie (2018) regarding the order of the questions, which means that the

researcher should set up simple questions that would be understood by all respondents and be unbiased. In this study, the questions were set from general to direct.

The questionnaire (Appendix B) consists of the following six dimensions:

- Dimension 1: Socio-demographic information;
- Dimension 2: Level of computer literacy;
- Dimension 3: Use of ICTs;
- Dimension 4: Library electronic document delivery;
- Dimension 5: Library skills training; and
- Dimension 6: Communication channels in use by the UNISA Library.

The dimensions are briefly outlined in the following sections.

4.5.1.1 Section A (Dimension 1)

Section A (Dimension 1) is the first construct (category) of this survey, whereby the questionnaire collected general demographic information. The socio-demographic information questions comprise of the following six sub-dimensions: gender; geographical location of the respondents; access to the UNISA Library online services in the past 12 months; whether the students had claimed their free, lifelong myLife email addresses; the mode used to access the Library services over the past 12 months; and the individual participant's Master's qualification.

4.5.1.2 B (Dimension 2)

Section B (Dimension 2), which pertains to the level of computer literacy, comprises the following two sub-dimensions: computer literacy skills and competency on library computers skills. The former comprises seven self-reported statements, while the latter consists of sixteen self-reported statements.

4.5.1.3 Section C (Dimension 3)

Section C (Dimension 3) pertains to the use of ICTs and it comprises three sub-dimensions, which are IL skills (consisting of ten questions), the support role of ICTs in

library research (consisting of three questions) and the contribution of ICTs to the effectiveness of the library services (consisting of seven self-reported statements).

4.5.1.4 Section D (Dimension 4)

Section D (Dimension 4) involves library electronic document delivery. It consists of two sub-dimensions – i.e. the respondent's means of access to the Internet (consisting of ten questions) and access to information (consisting of thirteen self-reported statements).

4.5.1.5 Section E (Dimension 5)

Section E (Dimension 5), which pertains to library skills training, comprises two sub-dimensions, which are: library skills training (consisting of eleven self-reported statements), followed by an open-ended question.

4.5.1.6 Section F (Dimension 6)

Section F (Dimension 6) pertains to the communication channels used by the UNISA Library. It comprises of one sub-dimension –library communication channels – and comprises eleven self-reported statements.

4.5.2 Open and closed-ended questions

According to Lewis-Beck, Bryman and Liao (2004), open-ended questions are called qualitative questions in contrast to closed-ended, structured questions. The open-ended question in quantitative research enables researchers to make use of the most valuable features relating to each type of question. For this study, only one unstructured, open-ended question in Section E (Question 2) was employed to investigate the library training modules that are needed by Master's Students in the CEDU: *Please indicate what library skills training you need, including any training not included in the list in Section E, Question 1 above.* This provided an opportunity for the participants to communicate their opinions freely without any form of control or interference from the researcher.

According to Chatham-Carpenter (2017:2), closed-ended and open-ended questions can be used in a survey. Pickard (2013:218) states that closed-ended questions are factual and produce factual answers. Harland and Holey (2011:482) and (Raubenheimer 2016:126) allude to the fact that numerical and text information can be collected on an

instrument to elaborate on quantitative questions, so as to add value and depth, as this allows the respondents to add additional data. The use of an open-ended question in this study would, therefore, assist the researcher in gaining deeper insight into the views of the CEDU Master's students.

4.5.3 Choice of measurement and scales

Measurement is a part of analysing survey results, testing the problem and summarising the collected data. Measurement should provide an objective evaluation and, therefore, the scales must be valid and reliable. When considering a method of collecting data, the four levels of measurement in social sciences should be understood, namely nominal, ordinal, interval and ratio levels of measurement.

Raubenheimer (2004:127) states that “the most commonly used scale in behavioural research is the ordinal level of measurement used in the five points Likert scale.” Therefore, the questionnaire in this study used the ordinal Likert scaled questions, from 1 to 5. According to Bezuidenhout, Cilliers and Davis (2014:159), the Likert scale requires respondents to indicate their degree of agreement or disagreement with a variety of statements related to an attitude or object. The scale is most often composed of two parts, namely the item (which is likely to be a statement) and the evaluation (whether the respondent agrees or disagrees with, and to what extent).

Bezuidenhout, Cilliers and Davis (2014) emphasise that the evaluation part of the questionnaire usually consists of five or seven-point scales. In the case of this study, the following five scales were adopted to measure the perceptions of the participants: ‘Strongly Disagree’ / ‘Disagree’ / ‘Undecided’ / ‘Agree’ / and ‘Strongly Agree.’ A value of 1 equalled strong disagreement, whereas a value of 5 indicated strong agreement. The values were explained to enable participants to “rate the extent to which they strongly disagree or strongly agree with a specific statements” as advised by Deas (2017:133), while also assisting in understanding the scales to choose from, for example: Strongly disagree = 1; Disagree = 2; Undecided = 3; Agree = 4; Strongly agree = 5; or None = 1; Basic = 2; Intermediate = 3; Advanced = 4; Expert = 5.

4.5.4 Pre-testing the questionnaire

The feasibility of this study was done through by pre-testing of the questionnaire. As advised by Creswell (2014:161), the pre-testing of the questionnaire is vital to establish the content validity of scores, improve the questions, format, and the relevant scales used before finally collecting data from the selected population. This is important, as the testing of the efficacy is also supported by researchers such as Creswell (2009:150) and Leedy and Ormrod (2010:196).

The pre-testing of this questionnaire was primarily conducted to test the correctness of the questions regarding their content, the way the questions are formulated and the viability of completing the survey within a specified period.

For the pre-testing, an online questionnaire was sent to collect data from pre-testing participants. Leedy and Ormrod (2010:196) mention that the questionnaire could be given to several friends or colleagues to test validity, which is to check if there are difficulties in answering the questions before distributing it to the final participants. In the case of this study, the first validation of the questionnaire was done through discussions with UNISA Library experts experienced in designing library questionnaires to be used for library surveys.

Thereafter, the draft questionnaire was discussed with relevant supervisors responsible for the UNISA Library's Request Services Department, in order to determine the validity of the questionnaire. It was then distributed to ten students and seven UNISA librarians, who were purposely selected to participate in the questionnaire's pre-testing, once it was validated by the supervisors.

Participants were requested to respond to the following questions:

- How long did it take to complete the questionnaire?
- Do you agree with the format and questions?
- Provide any criticism or suggestion if necessary

Only ten of the seventeen people (58%) completed the questionnaire relating to the pre-testing. The average time to finish the questionnaire was 20 minutes. No participant stated it was too long or too short, and positive feedback was obtained on the answer sheet. No remarks or criticism were provided.

The second draft of the questionnaire was then developed with input received from the first respondents and tested by two experts, who assisted with the editing of the questionnaire. Significant advice was received from the experts pertaining to definitions, for example: "IL" – Section C; "Encore Quick and Easy Search" and "UNISA Institutional Repository" – Section D; and "LibGuides" in Section E.

After the the third draft of the questionnaire was finalised, it was sent to the UNISA Library's supervisors and managers for final input. Lastly, a statistician was invited to advise on uncertainties experienced by the participants. This resulted in an assessment of whether the questions relate to the objectives of the study, in order to determine whether the questionnaire will collect the correct information needed for the study.

Based on the input received during the discussion with the statistician, the final questionnaire was designed. The questionnaire was lastly pre-tested by fifteen Master's students and two experts responsible for document delivery services at the UNISA Library. The two experts responsible for editing had the required knowledge to use ICTs in the UNISA Library's DDS.

After the last corrections were made, the finalised questionnaire was distributed to the pre-testing participants. Nine completed questionnaires were returned by the selected participants of whom the two experts pointed out minor errors to be corrected. They all indicated that it took them fifteen to twenty (15–20) minutes to complete the questionnaire and that this was an acceptable time to participate in a survey.

4.5.5 Time dimension

A cross-sectional study survey was used as it enables the researcher to collect all the needed data at a single time (Leedy & Ormrod 2010:186). However, using a cross-sectional survey is said to have specific challenges, in that the different participants in the sample might have been raised in different environments.

The researcher designed a survey questionnaire, accompanied by the Letter of Consent, which is available in Appendix A. The research objectives were explained to the respondents in the letter and the closing date for data collection was indicated. Participants also assured that their responses would be treated in a fully confidential manner. They were also informed that a web-based questionnaire would be used and, as such, it would be challenging to identify individual participants. They were informed that the data would be captured by a statistician, who would return it to the researcher for data analysis.

4.5.6 Administering the questionnaire

The researcher administered the questionnaire for almost three and a half months from the 19 May 2018 to 31 August 2018. An online questionnaire (Appendix B) was distributed to the population on a web-based tool for questionnaires known as SurveyMonkey®, with a return date stipulated as four working days. A consent cover letter was attached to the email.

The main reason for using an online questionnaire was to make it possible to reach all Master's students nationally and internationally, so as to examine the use of ICTs in an ODL library environment. In order to distribute the survey questionnaire via email and in line with the South African Protection of Personal Information Act, No 4 of 2013 (POPI Act) requirements, the researcher had to request permission from the University to use the students' myLife email addresses. All participants had computers, which enabled them to receive the questionnaire simultaneously, regardless of geographical location. Internet access allowed them to open the questionnaire via SurveyMonkey® at the time the questionnaire was distributed.

A library staff member of the UNISA Library at the Muckleneuk Campus was requested to monitor the responses. When a link was provided to self-monitor the responses online, this role was later taken over by the researcher. The number of responses was monitored for a period of two and half months, thereby giving respondents time to respond, after which reminders were sent to the respondents (if necessary). The statistician was regularly informed of the number of respondents, as the person had to indicate when the survey could be closed.

A follow-up email was sent to the participants to inform them that the closing date was extended until 31 August 2018, because the number of responses received from May to July was not satisfactory. The email also included the consent letter. It was also stated that an improved response rate would contribute positively to the collected data. On 31 August 2018, when an adequate response rate of 117 responses was noted, the questionnaire link was closed. This decision aligned with the explanation of Salkind (2012:81), who states that a larger study size would allow the researcher to test the hypothesis and give a fair answer to a study.

Only available respondents participated in this non-probability study. The statistician confirmed that the number of responses was sufficient for meaningful analysis.

Upon return, all 117 questionnaires were checked to ensure that they were completed up to the end. It was noted that 117 respondents took part in the research, while it was also noted that a final response of 107 (91,4%) was reached, since some respondents did not fully complete the questionnaires. This was done as a first step in validating the integrity of the data. Electronic data capturing of the closed-ended questions of the questionnaire then followed. This included a further data integrity check to ensure that the responses were captured correctly.

The following challenges were experienced during the data collection phase. – The fact that 117 Master's students out of a population with 673 students responded to the survey

can be ascribed to the use of the students' myLife email accounts at UNISA. It appeared as though some students did not even open their emails. The invitation then had to be sent to personal emails accounts that were available on their patron records, in order to enable them to participate in the study. This contributed positively to the increase in the number of respondents. Using other email accounts also had some challenges as bug master's blocked the survey email from reaching the respondents, and it was difficult to reach some of the students who were not using their University myLife email accounts.

Since the data capturing process was outsourced to a statistician, special arrangements had to be made, so that the statistician could get access to the questionnaire on SurveyMonkey® without allowing potential participants to access the questionnaire after the closing date.

The completed online questionnaires were packaged in an electronic Excel file for further analysis and testing by the appointed statistician and to load the Excel spreadsheet into the SPSS file for further analysis.

Informed consent was provided by 117 (20.3%) of the participants, who indicated their willingness to participate in the research, but only 107 out of the 117 respondents (91.4%) that could be used in this study. Spoiled questionnaires (8.5%) could not be used and were not analysed.

4.6 Validity and reliability of the research findings

Reliability and validity are vital elements in the evaluation of measurement instruments when gathering data (Tavakol & Dennick 2011:53). The terms *validity* and *reliability* may appear synonymous, but they have entirely different meanings when it comes to the evaluation of measures of concepts (Bryman 2012:168).

4.6.1 Reliability

Reliability is described as involving the consistency with which a measuring instrument yields precisely the same results on repeated occasions (Leedy & Ormrod 2013:91;

Creswell 2014:149; Creswell & Creswell 2018:154; Dawson 2018:5). The reliability of the measurement of the relevant instrument or questionnaire used in this study was estimated by Cronbach's alpha, in order to test internal consistency. Cronbach's alpha is the coefficient instrument that is used to measure internal reliability (Dawson 2018:6). According to Bryman (2012) and Tavakol and Dennick (2011:53), the calculation of Cronbach's alpha coefficient is essential when testing internal reliability. Tavakol and Dennick (2011:53) and Creswell and Creswell (2018:154) also state that Cronbach's alpha is expressed as a number between 0 and 1. Bryman (2012) further argues that "a computed alpha coefficient will vary between one (1) (representing perfect internal reliability) and zero (0) (representing the absence of internal reliability) as 0.80 is mostly accepted as a rule of thumb to denote an acceptable level of internal reliability".

Table 4.2 displays the acceptable value of the Cronbach alpha related to the acceptability (reliability) of the questionnaire in this study.

Table 4.2: Cronbach alpha values

CRONBACH ALPHA VALUES		
Construct of variables	Cronbach	Reliability
Computer literacy skills	0.91	Acceptable
Competency on library computer skills	0.93	Acceptable
IL skills	0.91	Acceptable
Support role of ICTs	0.92	Acceptable
The contribution of ICTs to the effectiveness of document delivery	0.86	Acceptable
Mean of access to the Internet	0.81	Acceptable
Access to information	0.89	Acceptable
Library skills training	0.96	Acceptable
Communication channels	0.87	Acceptable

4.6.2 Validity

Validity relies on the quality of the measurement instrument or assessment tool and the instrument must be fit for measuring what it is intended to measure or is claimed to

measure (Salkind 2012:113; Leedy & Ormrod 2013:89; Dawson 2018:5). In other words, validity is the extent to which the selected instrument reflects the reality of the constructs that being measured (Bezuidenhout, Cilliers & Davis 2014:256). Regarding the validity of the instrument (questionnaire), Creswell (2014:250) declares that, in quantitative research, *validity* refers to whether one can draw meaningful and useful inferences from scores on a particular instrument.

The reliability of an instrument is associated with and closely related to its validity (Tavakol & Dennick 2011:53). The validity of an instrument lies in its reliability, while the reliability of an instrument does not depend on its validity (Nunnally & Bernstein 1994). This means that the instrument used in this study is valid, because the above Cronbach alpha values (Table 4.2) indicate that the instrument is reliable.

In this study, the validity of the measuring instrument was confirmed by pre-testing the questionnaire, as ten students and seven experts were requested to assess the relevance of the questions independently, to minimise subjectivity. Based on the replies received, the questions were modified, as advised by (Welman & Kruger 2001:141; Creswell & Creswell 2018:154).

4.7 Data analysis

Data analysis pertains to the categorisation, ordering, manipulation and summation of data to obtain answers to research questions. Data analysis aims to transform the collected data into meaningful information (Dube 2017).

Data for this study was loaded into an electronic spreadsheet software program by the help of the electronic system (SurveyMonkey®). The Library Research Specialist was able to assist with the loading of the data into an Excel spreadsheet. In line with Leedy and Ormrod's (2010:257) suggestions, a program using an electronic spreadsheet that allows researchers to manipulate data in Microsoft Excel was used. The use of such an electronic spreadsheet allows the researcher to arrange the manipulated data in such a manner that it can be used easily. The Excel spreadsheet with the data was then given

to the appointed statistician to process with the aid of the Statistical Package for Social Sciences (SPSS) program. The use of SPSS data analysis software is used by various researchers, who analyse their data quantitatively, such as Hlongwane (2014:84) and Ndlovu (2017:105). The data was analysed by means of statistical procedures, in order to determine the nature of the relationship between variables. The data analysis process comprised of three significant steps – descriptive statistical analysis, mean and standards deviation and correlational analysis.

4.7.1 Descriptive statistical analysis

Descriptive statistics involves a description of the general characteristics of socio-demographic information of the sample in numerical data (Salkind 2017:133).

4.7.2 Mean and standards deviation

Mean is the average of a set of numbers. This indicates that mean equals the sum of all the scores divided by the number of scores (Tredoux & Durrheim 2013). According to Vogt (2007:19), the standard deviation is a measure of the variability of a group of scores.

In this study and as a measure of central tendency, mean was used to calculate the arithmetic average of all scores of the items related to computer literacy, the use of ICTs and library electronic document delivery. The standard deviation test was performed to determine how the scores deviate around the mean score. The mean and standard deviations were used to describe the distribution of the following variables: computer literacy skills, competency on library computer skills, IL skills, the support role of ICTs, the contribution of ICTs to effectiveness, means of access to the Internet, access to information, library skills training and communication channels. Moreover, frequency distribution was also used to describe the distribution scores for the socio-demographic information of respondents (gender, geographical location of the respondents, access to the UNISA Library online services in the past 12 months, whether they had claimed the myLife email address, mode used to access to library services for the past 12 months, and the respondents' Master's registrations).

4.7.3 Correlational statistics

Correlational statistics were conducted to test the direction and strength of the relationship between the use of ICTs, level of computer literacy, library skills training and DDS and communication channels with UNISA's library services. Tredoux and Durrheim (2013:171) define *correlation* as a measure of the strength and direction of the relationship between variables.

In this study, the product-moment correlation coefficient (r), also called *Pearson's correlation coefficient*, was used to measure the extent of the association between variables. The size of the correlation coefficient ranges between -1 and +1. As explained by Tredoux and Durrheim (2013:198), this means that -1 = a perfect linear negative relationship; 0 = no relationship; and +1 = a perfect positive linear positive relationship. For this study, a cut-off point of $r \geq .30$ (medium effect) and $p \leq .05$ was chosen to determine the practical significance of correlation coefficients as suggested by (Cohen 1988).

4.7.4 Standardised regression analysis

According to Montgomery, Peck and Vining (2012), a regression analysis that includes more than one regression variable is called *multiple regression analysis*. Multiple regression analysis is an extension of the regression analysis concept and constructs models with several explanatory variables (Tabachnick & Fidell 2014). Multiple regression allows the researcher to find a linear combination of more independent variables that maximally predict or explain a dependent variable (Tredoux & Durrheim 2013). In multiple regression, each independent variable is weighted by the regression analysis procedure and to ensure maximum prediction from the set of dependent variables (Tabachnick & Fidell 2014). This means that multiple regression analysis is used when the research aims to model a multivariate relationship.

In this study, multiple regressions were performed to determine the degree of variance that could explain how the use of ICTs, computer literacy and library training as

independent variables positively and significantly predict the value of library electronic document delivery as the dependent variable.

4.8 Level of statistical significance

The statistical level of significance allows the researcher to decide on the acceptance or the rejection of the null hypothesis. As suggested by Cooper and Schindler (2011:721), the statistical significance was conducted in this study to determine the probability of rejecting the null hypothesis. The significance level of statistical alpha (α) is conventionally associated with specific values that are 0.05 or 0.01. This means that, if the chosen level of significance is 0.01, there is 1% possibility that the null hypothesis will be rejected and, if the chosen level is 0.05, there is 5% possibility of the null hypothesis being rejected (Salkind 2017:148).

There are two types of errors that may occur while testing the null hypothesis. Type I error occurs by rejecting the null hypothesis when it is actually true, and the Type II error happens when the researcher fails to reject the null hypothesis when it is false or negative (Tredoux & Durrheim 2013:139).

The values of statistical significance are given in Table 4.3.

Table 4.3: Values of statistical significance (Tredoux & Durrheim 2013).

VALUES OF STATISTICAL SIGNIFICANCE		
Probability	Level	Significance
P	0.10	Less significant
P	0.01 to 0.05	Significant
P	0.001 to 0.01	Very significant
P	0.001	Extremely significant

For this study, the most used level of statistical significance, 0.05, was chosen as a rule of thumb to test the null hypothesis. This means that there is a chance of the null hypothesis being rejected, when the p-value is lower than 0.05 ($p \leq 0.05$).

4.9 Data interpretation, display and reporting

Data interpretation, display and reporting of the results are discussed in Chapters 5 and 6. Chapter 5 presents an analysis of the data obtained from the data collection instrument; i.e. the survey questionnaire.

4.10 Chapter summary

This chapter explained the empirical study that was conducted to assess the use of ICTs by Master's students in the CEDU when using the ODL Library's document delivery services. This included an outline of the research approach and design used in response to the study's research objectives and related research questions. The chapter explained that the survey design was applied, based on the quantitative research approach, and that a researcher-designed questionnaire was used to collect data. Important aspects relating to survey research were discussed, including the method used for data analysis and related software used to analyse the captured data, as well as aspects relating to the reliability and validity of this study.

This chapter formed the basis on which the study's statistical findings and interpretation of the data will be done in Chapter 5.

CHAPTER 5: RESEARCH RESULTS

5.1 Introduction

This chapter discusses the results of the statistical analyses of the collected data. The results are interpreted and integrated with the literature relevant to the constructs of computer literacy, the use of ICT, library skills training, document delivery, and communication channels.

5.2 Descriptive statistics

Descriptive statistics collected for this study relate to the questions posed in sections A–F of the questionnaire. The results are shown in graphs, tables and pie charts to display the statistical numbers received from participants.

The results of socio-demographic information questions are presented in the next section. These results pertain to gender, the geographical location of the respondents, access to the UNISA Library online services in the past 12 months, whether the respondent claimed his/her myLife email address, the mode used to access the UNISA Library services for the past 12 months, and the details of the participant's Master's registration.

5.2.1 Gender

Table 5.1 contains details about the participants' gender contribution.

Table 5.1: Gender distribution of the sample (N = 107)

GENDER DISTRIBUTION (N = 107)					
	Category	Frequency	Percent	Valid percent	Cumulative percent
Valid	Female	69	64.5	64.5	64.5
	Male	38	35.5	35.5	100.0
	Total	107	100.0	100.0	

The gender distribution is illustrated in Figure 5.1.

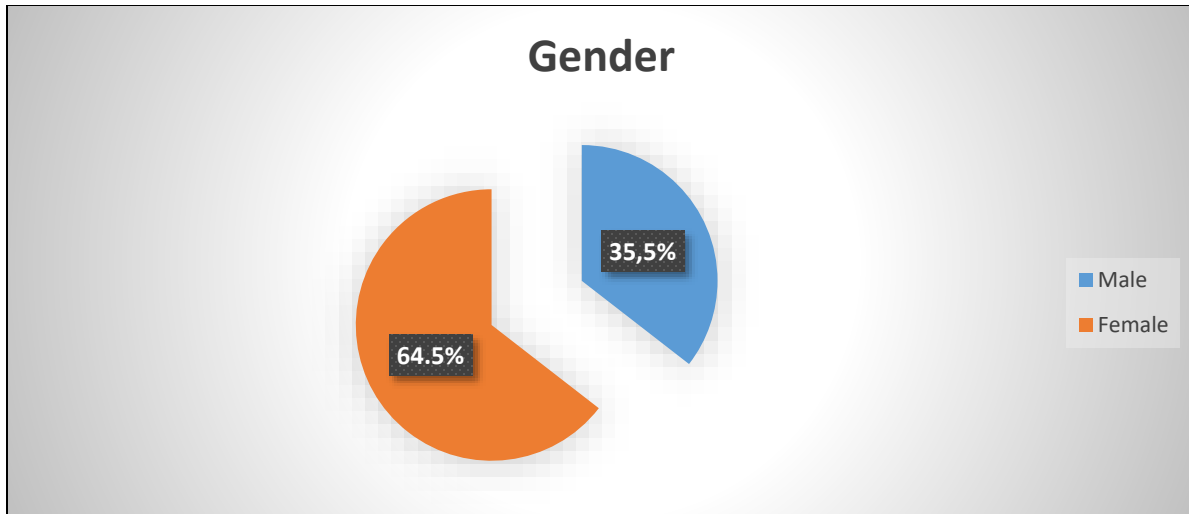


Figure 5.1: Gender distribution of the sample (N = 107)

As shown in Table 5.1 and Figure 5.1, which illustrate the gender distribution in the sample, there were 35.5% male respondents and 64.5% female respondents (N = 107) in the sample. Dube (2017:75), who also included gender in her study, indicates that it was, in fact, not necessary, as gender-based patterns were not an issue of her study. In this study, gender is also not an issue, although this information may serve as a basis for comparison, should further research on the topic be conducted.

5.2.2 Geographical location

Table 5.2, which provides the geographical location of participants in the respective provinces of South Africa and the countries outside the borders of South Africa, where international students reside, relate to the following question:

Please indicate in which geographical location are you based.

Table 5.2: Geographical location

GEOGRAPHICAL LOCATION (N = 107)					
	Category	Frequency	Percent	Valid percent	Cumulative percent
Valid	Eastern Cape	4	3.7	3.7	3.7
	Free State	3	2.8	2.8	6.5
	Gauteng	34	31.8	31.8	38.3
	Kwa-Zulu Natal	8	7.5	7.5	45.8
	Limpopo	13	12.1	12.1	57.9
	Mpumalanga	13	12.1	12.1	70.1
	North West	2	1.9	1.9	72.0
	Western Cape	9	8.4	8.4	80.4
	International Students	21	19.6	19.6	100.0
	Total		107	100.0	100.0

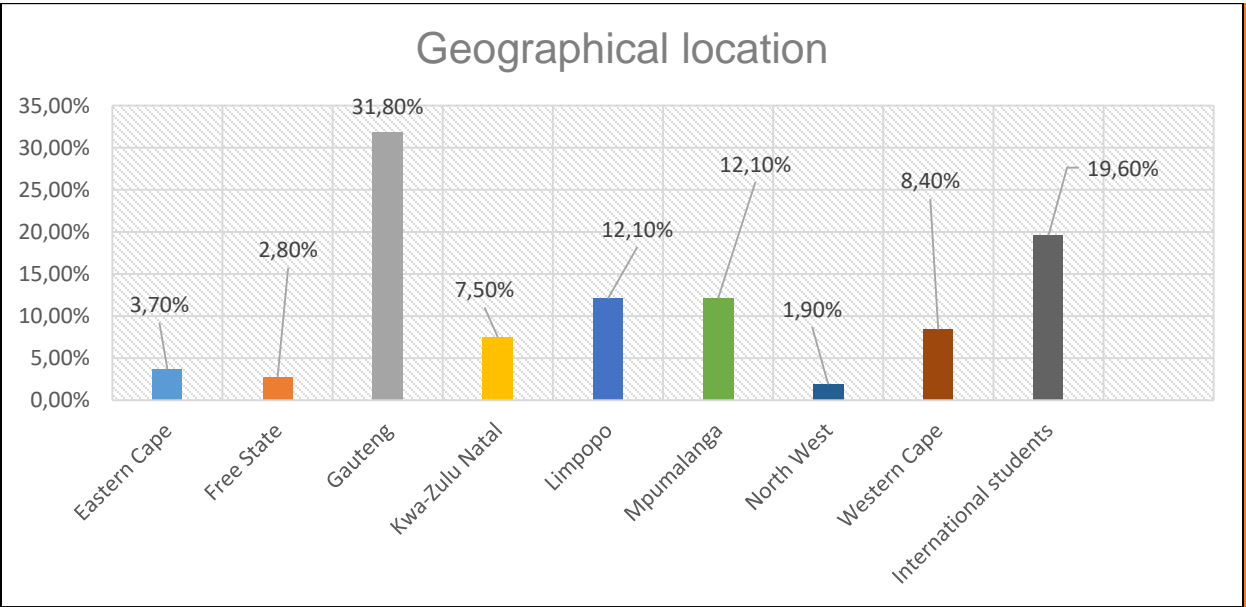


Figure 5.2: Geographical location distribution of the sample (N = 107)

As indicated in Table 5.2 and Figure 5.2, with 31.8 % of the sample, the majority of the respondents were based in Gauteng Province, while 3.7% of respondents were from Eastern Cape Province; 2.8% of the respondents were from the Free State Province; 12.1% of respondents were based in Limpopo Province; 12.1% of respondents were

based in Mpumalanga Province; 1.9% of respondents were based in the North West Province; 7.5% of respondents were based in Kwa-Zulu Natal; 8.4% were from the Western Cape Province; and 19.6% of respondents were international students.

5.2.3 Access to the UNISA Library online services

Table 5.3 and Figure 5.3, which provide the results of access to the UNISA Library's online services for the twelve months before the date when the data were collected, relate to the question:

In the past 12 months, have you used the UNISA Library online services (information services that are provided over the Internet)?

Table 5.3: Access to the UNISA Library online services

ACCESS TO THE UNISA LIBRARY'S ONLINE SERVICES (N = 107)					
	Category	Frequency	Percent	Valid percent	Cumulative percent
Valid	Yes	87	81.3	81.3	81.3
	No	20	18.7	18.7	100.0
	Total	107	100.0	100.0	

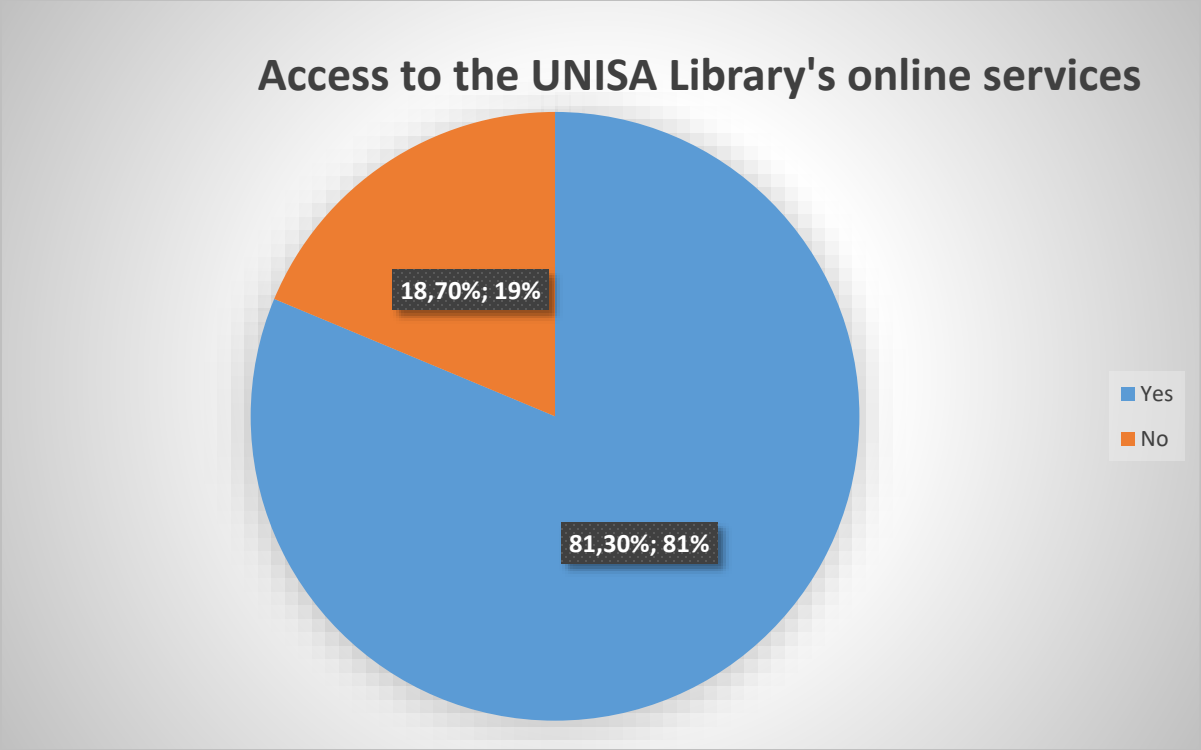


Figure 5.3 Access to UNISA Library online services in the past 12 months (N = 107)

Table 5.3 and Figure 5.3 indicate that 81.3 % of students accessed the UNISA Library’s online services in last 12 months. However, 18.7% of students did not have access to the UNISA Library’s online services in the past 12 months. The data in the sample indicates that the majority of students had used the UNISA Library's online services in the last 12 months.

5.2.4 Participants claimed myLife email address

The results in Table 5.4 and Figure 5.4 relate to Question 4 (Section A):
Have you claimed your myLife email address, joined myUnisa and obtained your myUnisa password?

Table 5.4: Claimed myLife email address

CLAIMED MYLIFE EMAIL ADDRESS (N = 107)					
	Category	Frequency	Percent	Valid percent	Cumulative percent
Valid	Yes	102	95.3	95.3	95.3
	No	5	4.7	4.7	100.0
	Total	107	100.0	100.0	

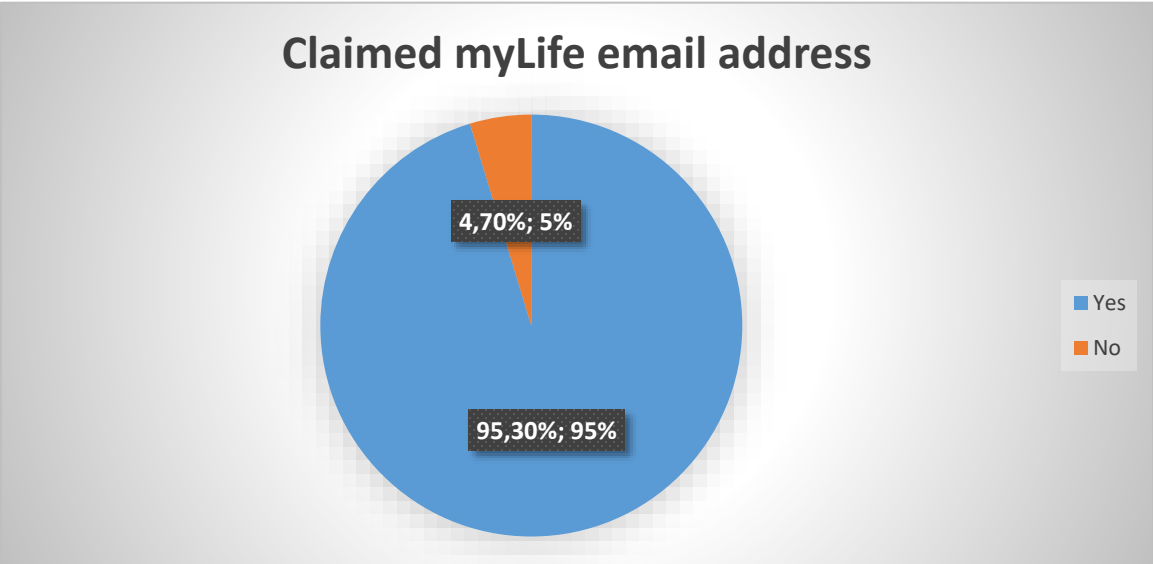


Figure 5.4: Claimed myLife email address distribution of the sample (N = 107)

Table 5.4 and Figure 5.4 illustrate that 95.3% of students did claim their myLife email addresses; while 4.7% of students did not claim their myLife email addresses. In this view, the findings show that the majority of students in the sample received information concerning their studies by utilising their myLife email addresses. However, there were those participants who indicated that they did not claim their myLife email accounts. See Section 5.8 for more information about this in the responses to the open-ended questions.

5.2.5 Mode of library service access for the past 12 months

The results in Table 5.5 and Figure 5.5, which present the mode of library access for the past 12 months relate to the question:

In the past 12 months, have you used the UNISA Library online services (information services that are provided over the Internet)?

Table 5.5: Mode of library service access for the past 12 months

MODE OF LIBRARY SERVICE ACCESS FOR THE PAST 12 MONTHS (N = 107)					
	Category	Frequency	Percent	Valid percent	Cumulative percent
Valid	Visiting the UNISA Library	46	42.99	97.8	97.8
	Telephonically	14	13.08	2.2	100.0
	Mobile website	16	14.95	100.0	
	Mobile App	31	28.97		
	Total		107	100.0	

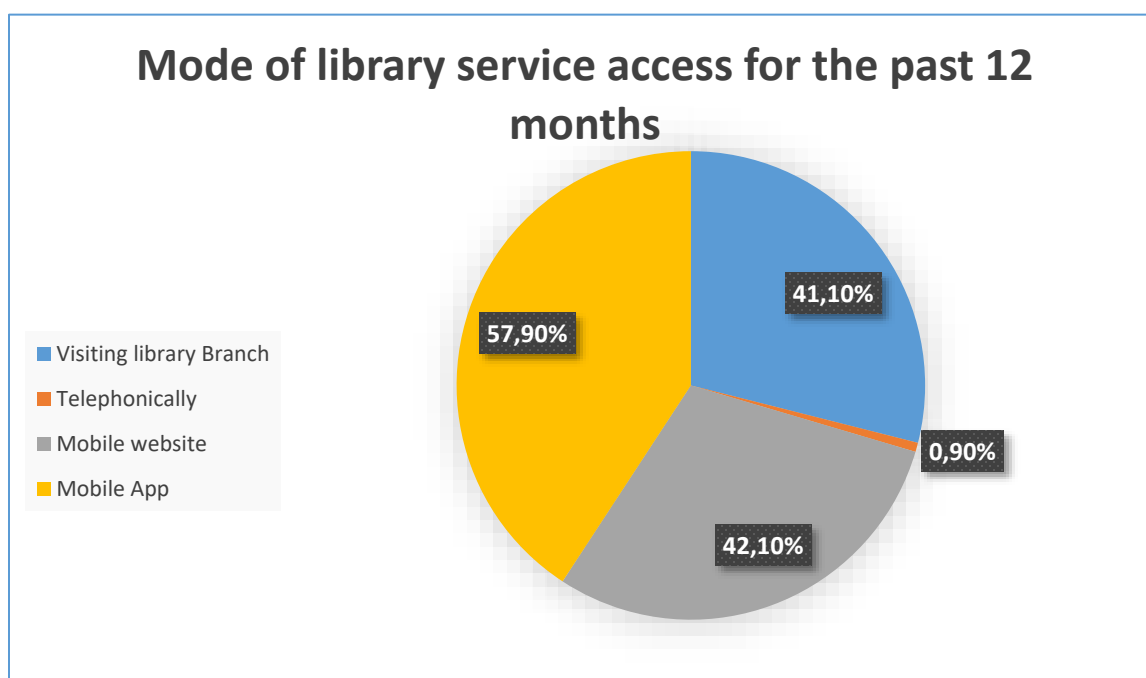


Figure 5.5: Distribution of the sample according to the mode used to access the UNISA Library services (N = 107)

Table 5.5 and Figure 5.5 present the modes used to get access to the UNISA Library's online services for the past 12 months. As displayed in the sample, 42.99% of

respondents personally visited the UNISA Library to get access to different library services; 28.97% of respondents used UNISA Library Mobile Application to access the UNISA Library’s online services; 14.95% of respondents used the UNISA mobile website to access the UNISA Library’s online services; 13.08% of respondents used telephones to access the UNISA Library’s online services. The data in the sample shows that many of respondents visited the UNISA Library in person and used both the UNISA Library website and the UNISA Library Mobile Application as a mode of access to the UNISA Library’s online services.

5.2.6 Field of study

The question posed in this regard was:

Please indicate below the Master’s qualification for which you are registered at UNISA.

The field of study is vital when training students, in that it helps to address a specific group, as opposed to training a group of students with a mix of subjects. For example, training involving the subject databases differs per database and database platform. Therefore, knowledge pertaining to the field of study of the specific student is essential to meeting the individual information needs of a student or group of students being trained. Behrens (1993:127) supports the idea of training students according to their subject fields, when training students in libraries.

Table 5.6 provides the results pertaining to the distribution of the students’ field of study across the sample.

Table 5.6: Field of study

FIELD OF STUDY (N = 107)					
	Category	Frequency	Percent	Valid percent	Cumulative percent
Valid	Master’s of Edu in Adult Education	8	7.5	7.5	7.5
	Master’s of Edu Curriculum Studies	16	15.0	15.0	22.4

FIELD OF STUDY (N = 107)					
	Category	Frequency	Percent	Valid percent	Cumulative percent
	Master's of Edu Management	26	24.3	24.3	46.7
	Master's of Environmental Edu	5	4.7	4.7	51.4
	Master's Edu Mathematics	7	6.5	6.5	57.9
	Master's of Edu Natural Sciences	6	5.6	5.6	63.6
	Master's of Inclusive Edu	17	15.9	15.9	79.4
	Master's of Open Distance Learning	6	5.6	5.6	85.0
	Master's of Philosophy	1	.9	.9	86.0
	Master's of Psycho-Education	9	8.4	8.4	94.4
	Master's Socio-Education	3	2.8	2.8	97.2
	Master's of Education with Specialisation in Curriculum	2	1.9	1.9	99.1
	Master's of Education with Specialisation in Environmental Education	1	.9	.9	100.0
	Total	107	100.0	100.0	

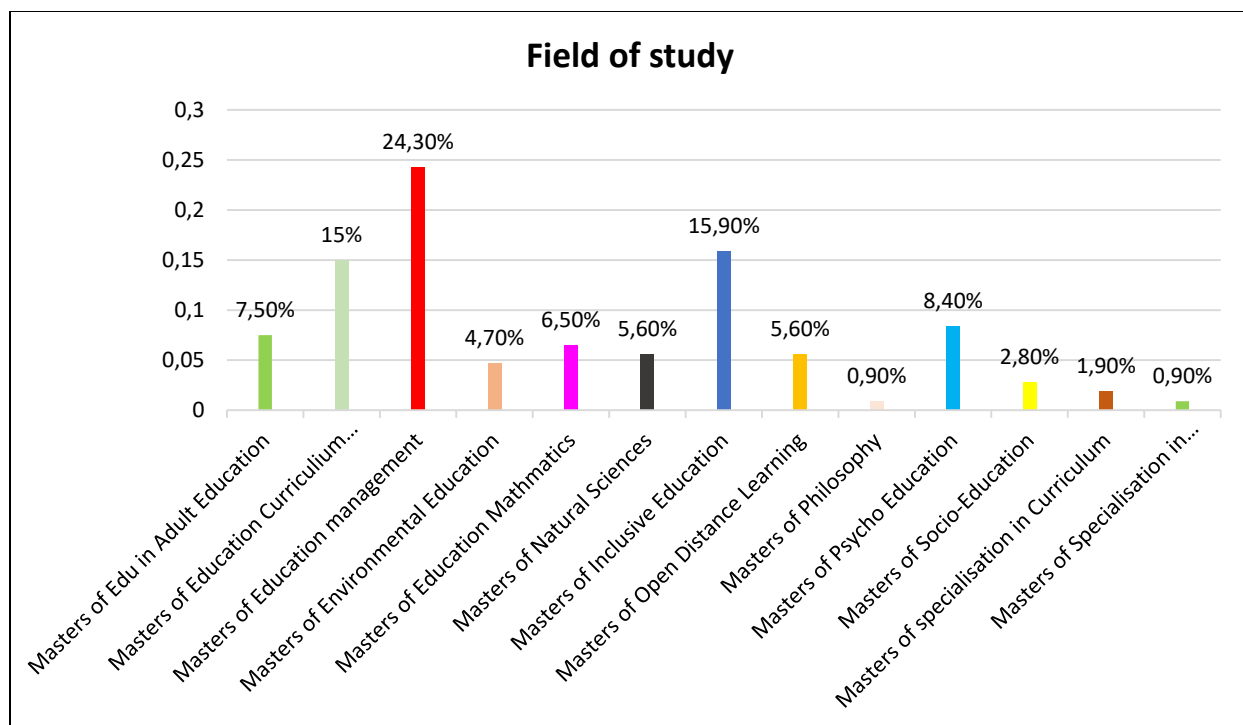


Figure 5.6: Distribution of the sample concerning the field of study

5.3 Mean and standard deviation

The results for the mean and standard deviations for computer literacy, the use of ICT, and library skills are summarised in Table 5.7.

5.3.1 Information literacy (IL) and computer skills

Table 5.7: Descriptive statistics: mean, standard deviations and Cronbach alpha coefficients

Variables	Mean	Standard deviations	Cronbach alpha
Computer literacy			
Computer literacy skills	4.17	.674	0.91
Competency on library computer skills	4.00	.747	0.93
The use of ICTs			
IL skills	3.16	1.00	0.91
Support role of ICTs	3.97	.936	0.92

Variables	Mean	Standard deviations	Cronbach alpha
The contribution of ICTs to the effectiveness of document delivery	3.50	.676	0.86
Library electronic document			
Means of access to the Internet	2.97	.844	0.81
Access to information	3.17	.923	0.89
Library skills training			
Library skills training	3.11	1.03	0.96
Communication channels	2.10	.909	0.87

Table 5.7 indicates that the mean computer literacy skills of 4.14, SD: 4.17, SD: 0, 674 for the participants, followed, followed by the competency on library computer skills (M =4.00; SD = 0.747). The score of mean (M), which is ≥ 3 , and the score of standard deviation, which is (SD) ≤ 1 , indicate the ability of the majority of respondents to perform different computer tasks independently and to use various Internet search engines available in UNISA Library database platform.

5.3.2 Use of ICTs

Table 5.7 indicates that the mean scores ranged from 3.97 to 3.16. The participants obtained the highest mean score for the support role of ICTs (M = 3.97; SD = .936), followed by the contribution of ICTs to effectiveness (M = 3.50; SD = .676). Participants obtained the mean score for IL skills (M = 3.16; SD = 1.00). As the score of mean (M) is ≥ 3 , the score of standard deviation is (SD) ≤ 1 , it means that the majority of the respondents recognise the significance of using ICT to find information and its contribution to the efficiency of using the library online services, as well as its supporting role.

5.3.3 Electronic document delivery service

Table 5.7 indicates that the mean scores ranged from 2.97 to 3.17. The participants obtained the highest mean score for access to information (M =3.17; SD =.923).

Participants' perception of the means of Internet access was relatively low ($M = 2.97$; $SD = .844$). The score of mean related to Internet access that is lower than 3 means that the majority of respondents did not have ready or convenient access to the Internet, in order access the different e-resources they need.

5.3.4 Library's skills training and communication channels

Table 5.7 indicates that the mean scores ranged from 2.10 to 3.11. The participants obtained the highest mean score for access to information ($M = 3.11$; $SD = 1.03$). Participants' perception of communication channels was relatively low ($M = 2.10$; $SD = .909$). As the score of mean (M) related to communication channels is lower than 3, the score of standard deviation (SD) is close to 1, it means that the majority of the respondents were not aware of the different modes of communicating with library services and, in turn, used by Library services. In view of this result, there is a need for the UNISA Library to inform students about the different channels available to them to communicate with the UNISA Library and to receive communication from the library.

5.4 Interpretation of descriptive statistics on biographical profile of the sample and frequencies

The biographical profile received from the sample showed that there were many female participants. They were registered for the Master's of Education Management; had successfully claimed their MyLife email addresses; and access the UNISA Library services over the past 12 months. They also used the mobile app as a way to access the Library in the past 12 months. These main sample characteristics had to be considered in the interpretation. Therefore, it seems that the participants in this group could benefit from improved use of ICT to enhance effectiveness and, ultimately, to increase their computer literacy, library skills and use of the available communication channels.

The participants' computer literacy, their use of ICTs and their library skills profile revealed that they were literacy skilled and demonstrated a high level of competency on library computer skills. The participants were between neutral and aware of the support role, contribution, effectiveness and IL skills needed for the use, of ICTs. The participants were

also between neutral and aware of the library skills training and access to information. They recorded a moderate level of the mean regarding access to the Internet and the communication channels. This indicated that the use of ICT contributes to the improvement of the quality of student learning and information seeking experiences (Rahman 2014).

5.5 Correlations analysis

According to Tabachnick and Fidell (2014), correlation is used in social research with the primary aim of establishing a correlational relationship between variables or the direction and strength of the relationship. The correlations between computer literacy, the use of ICTs, library skills training and communication channels were calculated by using Pearson's correlations.

5.5.1 Pearson's correlation

The Pearson's correlation was used to analyse the interrelationship between the different variables and the use of the ICT, as well as the direction and strength of the relationship between the constructs (Mitonga-Monga 2015:190).

For this purpose, and as recommended by Tabachnick and Fidell (2014), the value was decided at 95% confidence interval level ($p \leq 0.05$) and the practical effect size at $r \leq 0.29 \leq r \geq 0.30 \geq 0.50$ (small, medium to large) effect.

5.5.2 Correlations between computer literacy, the use of ICT, library skills training and communication channels

The correlation between computer literacy, the use of ICT, library skills training and the Library's electronic document delivery and communication channels is summarised in Table 5.8.

Table 5.8: Correlation between computer literacy, the use of ICT, library skills training and the Library's electronic document delivery and communication channels

Variables	Computer literacy	Library skills training	Competency in library skills	IL skills	Support role of ICTs	The contribution of ICTs to the effectiveness	Mean of access to the Internet	Access to information	Library skills training	Communication channels
Computer Literacy	1									
Library skills training	0.36**	1								
Competency in library skills	0.27*	0.19*	1							
IL skills	0.40**	0.20*	0.81** *	1						
Support role of ICTs	0.10	0.01	0.35**	0.25*	1					
Contribution of ICTs to effectiveness	0.01	-0.05	0.50** *	0.40**	0.66***	1				
Mean of access to the Internet	0.18	-0.01	0.08	-0.03	0.00	0.09	1			
Access to information	0.06	-0.02	0.42**	0.39**	0.33**	0.42**	0.15*	1		
Library skills training	-0.05	-0.02	0.32**	0.37**	0.26*	0.47**	0.22*	0.42**	1	
Communication channels	-0.16*	-0.09	0.29*	0.24*	0.21*	0.35**	0.49**	0.45**	0.42**	1

Notes

N = 107. *** $p \leq .001$ ** $p \leq .01$ * $p \leq .05$. + $r \geq .29$ (small effect); ++ $r \geq .30 \geq r \leq .49$ (medium effect); +++ $r \geq .50$ (large effect).

Table 5.8 shows that the variable correlated significantly ($r \geq 0.15$ $r \geq 0.81$; small to sizeable practical effect, $p \leq 0.05$) and that there was a negative correlation ($r \leq -0.16$) for the communication channels.

The results indicate that computer literacy correlated significantly with computer library skills ($r = 0.36$; medium effect; $p \leq 0.05$), competency of library skills ($r = 0.27$; small effect; $p \leq 0.05$) and IL skill ($r = 0.40$; medium effect; $p \leq 0.05$). A negative correlation was found between computer literacy and communication channels ($r = -0.16$; small effect; $p \leq 0.05$).

The results indicate that computer literacy skills correlated significantly with a competency in library skills ($r = 0.19$; small effect; $p \leq .05$) and IL skills ($r = 0.20$; small effect; $p \leq .05$).

A significant positive correlation was established between competency in library skills with IL skills ($r = 0.81$; large effect; $p \leq .05$), the supporting role of ICTs ($r = 0.35$; medium effect; $p \leq 0.05$), the contribution of ICTs to effectiveness ($r = 0.50$; large effect; $p \leq 0.05$), access to information ($r = 0.42$; medium effect; $p \leq 0.05$), library skills training ($r = 0.32$; medium effect; $p \leq 0.05$) and communication channels ($r = 0.29$; small effect; $p \leq 0.05$).

The results indicate that IL skills correlated significantly with the support role of ICTs ($r = 0.25$; small effect; $p \leq .05$), the contribution of ICTs to effectiveness ($r = 0.40$; medium effect; $p \leq 0.05$), access to information ($r = 0.39$; medium effect; $p \leq 0.05$), library skills training ($r = 0.37$; medium effect; $p \leq 0.05$) and communication channels ($r = 0.24$; small effect; $p \leq 0.05$).

The results indicate that the support role of ICTs correlated significantly with the contribution of ICTs to effectiveness ($r = 0.66$; large effect; $p \leq .05$), access to information ($r = 0.33$; medium effect; $p \leq 0.05$), library skills training ($r = 0.26$; small effect; $p \leq 0.05$) and communication channels ($r = 0.21$; small effect; $p \leq 0.05$).

The results also indicate that the contribution of ICTs to effectiveness correlated significantly with access to information ($r = 0.42$; medium effect; $p \leq .05$), library skills training ($r = 0.47$; medium effect; $p \leq 0.05$) and communication channels ($r = 0.35$; medium effect; $p \leq 0.05$).

A significant positive correlation was established between the mean of access to the Internet with access to information ($r = 0.15$; small effect; $p \leq .05$), library skills training ($r = 0.22$; small effect; $p \leq 0.05$) and communication channels ($r = 0.49$; medium effect; $p \leq 0.05$).

Finally, the results indicate that access to information correlated significantly with library skills training ($r = 0.42$; medium effect; $p \leq 0.05$) and communication channels ($r = 0.45$; medium effect; $p \leq 0.05$). A significant positive correlation was established between library skills training and communication channels ($r = 0.42$; medium effect; $p \leq .05$).

5.6 Regression analysis

The standard multiple regression analysis was performed to determine if computer literacy, the use of ICTs and library skills training positively predict the effectiveness of the Library's electronic document delivery services and communication channels. The F-test was used to test whether there was significant regression between the independent variables (computer literacy, the use of ICTs and library skills training) and the dependent variables (the Library's electronic document delivery services and communication channels).

Collinearity diagnosis was inspected to ensure that zero-order correlations were below the level of multi-collinearity concern ($r \geq .80$); that the variance inflation factors did not exceed 10; that the condition index was below 15; and that the tolerance values were close to 1.0 (Tabachnick & Fidell 2014). The significant value was set at the 95% confidence interval level ($F_p \leq .05$).

5.6.1 Regression: computer literacy, the use of ICTs and library skills training as predictors of the means of access to the Internet

Table 5.9 summarises the significant results of the standardised regression analyses that were performed to determine whether computer literacy, the use of ICTs and library skills training acted as a predictor of the means of access to the Internet. Table 5.9 shows that

the regression model was used and that the model was statistically significant ($F_p \leq .05$). The model accounted for .07% ($R^2 = 0.07$: means of access to the Internet).

Table 5.9: Computer literacy, the use of ICTs and library skills training as predictors of the means of access to the Internet

Predictor variables	Unstandardised	Standardised	t	p-values	F	R	R ²
	B	β					
(Constant)	24.333		5.215	.000	2.53*	.116	.07
Competency on library computer skills	.162	.251	1.442	.153			
IL skills	-.354	-.348	-2.073	.041			
Support role of ICTs	-.622	-.204	-1.586	.116			
Contribution of ICTs to effectiveness	.401	.222	1.506	.135			
Library skills raining	.166	.218	1.947	.054			

Notes

N =107; *** $p \leq .001$ – statistically significant. ** $p \leq .01$ – statistically significant. * $p \leq .05$ – statistically significant. + $R^2 \leq 0.12$ (small practical effect size). ++ $R^2 \geq 0.13 \leq 0.25$ (medium practical effect size), +++ $R^2 \geq 0.26$ (large practical effect size)

Model 1 (means of access to the Internet only IL skills ($\beta = -0.35$; $p = 0.001$) acted as significant negative predictors of means of access to the Internet. IL skills contributed the most towards explaining the variance in the means of access to the Internet variable. Competency in library computer skills, the support role of ICTs, the contribution of ICTs to effectiveness and library skills training variables did not act as predictors of the means of access to the Internet.

5.6.2 Regression: computer literacy, the use of ICTs and library skills training as predictors of access to information

Table 5.10 summarises the significant results of the standardised regression analyses that were performed to determine whether computer literacy, the use of ICTs, and library skills training acted as a predictor of access to information. Table 5.10 shows that the regression models were used and that the model was statistically significant ($F_p \leq .05$). The model accounted for 26% ($R^2 = 0.26$: access to information).

Table 5.10: Computer literacy, the use of ICTs and library skills training as predictors of access to information

Predictor variables	Unstandardised	Standardised	t	p-values	F	R	R ²
	B	β					
(Constant)	9.24		1.58	.118	8.16***	.29	.26
Competency on library computer skills	.183	.200	1.30	.197			
IL skills	.092	.064	.432	.666			
Support role of ICTs	.450	.104	.916	.362			
Contribution of ICTs to effectiveness	.286	.112	.859	.393			
Library skills training	.267	.248	2.50	.014			

Notes

N =152; *** $p \leq .001$ – statistically significant. ** $p \leq .01$ – statistically significant. * $p \leq .05$ – statistically significant. + $R^2 \leq 0.12$ (small practical effect size). ++ $R^2 \geq 0.13 \leq 0.25$ (medium practical effect size), +++ $R^2 \geq 0.26$ (large practical effect size).

In Model 2 (access to information), the predictor variables between library skills training ($\beta = 0.248$; $p = 0.014$) and access to information were tested. Library skills training acted as a significant predictor of access to information. Library skills training contributed the most towards explaining the variance in the access to information variable. Competency in library computer skills, IL skills, the support role of ICTs and the contribution of ICTs to effectiveness variables did not act as predictors of access to information.

5.6.3 Regression: computer literacy, the use of ICTs and library skills training as predictors of communication channels

Table 5.11 summarises the significant results of the standardised regression analyses that were performed to determine whether computer literacy, the use of ICTs and library skills training acted as predictors of communication channels. Table 5.11 shows that the regression model was used; and that the model was statistically significant ($F_p \leq .05$). The model accounted for 21% ($R^2 = 0.21$: communication channels).

Table 5.11: Computer literacy, the use of ICTs and library skills training as predictors of communication channels

Predictor variables	Unstandardised	Standardised	t	p-value	F	R	R ²
	B	β					
(Constant)	10.201		1.703	.092	8.197***	0.24++	0.21++
Competency on library computer skills	.154	.168	1.067	.289			
IL skills	.200	.139	.930	.355			
Support role of ICTs	.363	.084	.720	.473			
Contribution of ICTs to effectiveness	.583	.228	1.822	.072			

Notes

N =152; ***p ≤ .001 – statistically significant. **p ≤ .01 – statistically significant. *p ≤ .05 – statistically significant. +R² ≤ 0.12 (small practical effect size). ++R² ≥ 0.13≤0.25 (medium practical effect size), +++R² ≥ 0.26 (large practical effect size).

In Model 3 (communication channels), competency on library computer skills, IL skills, the support the role of ICTs and the contribution of ICTs to effectiveness did not act as predictors of the communication channels variable.

5.6.4 Decisions regarding the research hypotheses

Based on the results and findings, a number of decisions were made regarding the hypotheses were made. As indicated in Table 5.12, the null hypotheses of this study were rejected because of the relationships that were found between computer literacy, the use of ICTs and library skills training and the library's electronic document delivery services and the communication channels.

Table 5.12: The decision regarding the research hypotheses

Research hypotheses	Decision
H01: There is no statistically significant relationship between computer literacy, the use of ICTs, library skills training and communication services in the UNISA Library	Rejected
Ha1: There is a statistically significant relationship between computer literacy, the use of ICTs, library skills training and communication services in the UNISA Library	Accepted
H02: There is no statistically significant relationship between computer literacy, the use of ICTs, library skills training and document delivery	Rejected
Ha2: There is a statistically significant relationship between computer literacy, the use of ICTs, library skills training and document delivery	Accepted

Research hypotheses	Decision
H03: Computer literacy, the use of ICTs and library skills training do not predict the means of access to the Internet.	Rejected
Ha3: Computer literacy, the use of ICTs and library skills training do predict the means of access to the Internet.	Accepted
H04: Computer literacy, the use of ICTs and library skills training do not predict access to information.	Rejected
Ha4: Computer literacy, the use of ICTs and library skills training do predict access to information	Accepted
H05: Computer literacy, the use of ICTs, and library skills training do not predict the communication channel.	Rejected
Ha5: Computer literacy, the use of ICTs, and library skills training do predict the communication channels.	Rejected

5.7 Interpretation and discussion of research results

5.7.1 Biographical profile of the sample and frequencies

The biographical profile acquired from the sample showed predominantly women registered for the Master's degree in Educational Management. These participants requested their e-mail addresses to be used when accessing the myUnisa/myLife portals of UNISA and they had accessed the UNISA Library facilities and the mobile app as a means of accessing the Library during the 12 months prior to the time when the data was collected.

These main sample characteristics had to be considered in the interpretation. Therefore, it seems as if participants in this group could benefit from improved use of ICTs to

enhance effectiveness and ultimately improve computer literacy, library skills and communication channels.

5.7.2 Descriptive statistics: Interpretation of the results

Table 5.7 is relevant to this section.

The participants' computer literacy, the use of ICTs and library skills profile revealed that the participants were literacy skilled and demonstrated a high level of competency in library computer skills. The responses were between neutral and aware with regards to the support role, contribution and effectiveness of, and IL skills needed for ICTs. The participants' responses were also between neutral and aware of the library skills training programmes and access to information and a moderate level of the mean of access to the Internet and the communication channels was recorded.

5.7.3 Research Objectives 1 and 2: Interpretation of correlation results

Table 5.8 is relevant to this section.

Research Objective 1 was to determine the statistically significant relationship between computer literacy, the use of ICTs, library skills training, communication services and document delivery in the UNISA Library.

The results suggest that computer literacy correlates positively with computer library skills, competency on library skills and IL skills. This implies that participants, who perceived ODL as providing them with the appropriate IL skills and who were able to locate, evaluate and use the library resources effectively, were likely to demonstrate a high level of ability and competency and literacy skills to use the library resources at their disposal.

These findings are consistent with those of Esterhuizen and Kuhn (2010), who found that computer literacy and information skills are key contributing factors to academic success.

Correia and Teixeira (2003) also report that IL and skills are crucial for personal development in preparing individual students for active citizenship and personal growth.

The results suggest that computer literacy correlates negatively with communication channels, which implies that the higher the perceived computer literacy, the lower the perception of communication channels. This suggests that the more the student claims to be computer literate, the less likely they will be to visit the library in person. These findings are consistent with those by Mbambo-Thata (2014) and Desta (2016), who indicate that the use of ICTs or technologies at the higher learning distance libraries is vital for learners and academics, in that it ensures effective teaching, learning and research.

The results also suggest that computer literacy correlates positively with the support role and contribution of ICTs to effectiveness. This implies that, if participants demonstrate abilities to locate, evaluate and identify the information needed in order to apply and address the need, they are more likely to be confident with the support and contribution with which the ICTs provide them. These findings are similar to those by Williams (2010), who found that learners who can locate and evaluate the information are likely to be independent and to demonstrate a high level of proficiency and self-sufficiency.

The results also show a positive correlation between the support role of ICTs and the contribution of ICTs to effectiveness with access to information, library skills training and communication channels. This can be explained by the fact that, when participants perceived support and aid from ICTs, they would likely be able to allocate and use the library resource efficiently and effectively. Participants who perceived the support role of ICTs seemed to be well informed on how to access and use the information.

These findings are consistent with those by dela Pena-Bandalaria (2007), who reported that students with strong backgrounds in the knowledge of how to locate, evaluate and use ICTs were exposed to library training before embarking on any particular technology.

5.7.4 Research Objective 3: Interpretation of regression analysis results

Table 5.9–Table 5.11 are of relevance to this section.

Research Objective 3 was to determine whether or not computer literacy, the use of ICTs and library skills training acted as predictors of the means of access to the Internet.

The results revealed that IL skills predict the means of access to the Internet, with information skills training contributing the most towards explaining the variance in the access to the Internet. Raubenheimer (2014:4) found that individuals possessing and using a set of skills to find, retrieve, analyse and use information and which assist them to access the Internet are likely to succeed in their studies. Individuals with abilities to evaluate and analyse appropriate information are likely to have competencies that help them in the formulation of research questions and in their ability to use information, as well as in understanding the ethical and legal issues surrounding information (Baji, Bigdeli, Parsa & Hoeursler 2018:3).

5.7.5 Research Objectives 4 and 5

Table 5.10 is of relevance in this section.

Research Objectives 4 and 5 involved determining whether or not computer literacy, the use of ICTs and library skills training acted as predictors of access to information and communication channels.

The results revealed that library skills training predicts access to information, with library skills training contributing the most towards explaining the variance in access to information. Springshare (2019) found that LibGuides are curated knowledge used to promote learning among learners. Individuals, who are provided with the library skills training, are likely to find it easier to access the information they need (Baji et al. 2018:3).

5.8 Qualitative data analysis and reporting

5.8.1 Section E. Questions EQ1 (Library skills training)

This question required participants to indicate their agreement or disagreement on their attendance to a face-to-face training held in their branch libraries (not online). The question had a follow-up, open-ended question (Section E. Question 2: EQ2: *Please indicate what library skills training you need, including any training not included in the list in EQ1 above.*

Various researchers are of the view that open-ended questions have value and may be used in a survey (Chatham-Carpenter 2017:2). In this open-ended question, the researcher allowed the participants to practice what the American Library Association (2000) and Williams (2010:152) recommend for students – i.e. that they should be able to recognise when they need information, locate, access, evaluate and effectively use information themselves, as advised by Williams (2010:148).

The responses to the question are reported in Table 5:13.

Table 5.13: Library programmes needed by students

LIBRARY PROGRAMMES NEEDED BY STUDENTS			
Library searching skills	Reference management tools	Plagiarism/similarities tool detecting	Microsoft & multimedia
Library catalogue	RefWorks	Turnitin	PowerPoint
E-journals	Mendeley		YouTube videos
Subject databases	Referencing		
Electronic Reserves	EndNote		
Institutional Repository	Atlas-ti		
e-Books	Harvard referencing technique		

LIBRARY PROGRAMMES NEEDED BY STUDENTS			
Library searching skills	Reference management tools	Plagiarism/similarities tool detecting	Microsoft & multimedia
Encyclopedias	SPSS software		
Requesting literature	Data coding		
Interlibrary loans			
Library online			
Encore Quick Search			
Electronic References			
Book extracts			
Reference works			

As indicated in Table 5.13, which deals with the responses Section E. Question 2, some participants indicated that they were studying outside South Africa and would also like to get such training remotely, while others stated that they are unable to attend library training skills because they live far from Pretoria/Tshwane.

According to Raubenheimer (2016:126) and Harland and Holey (2011:482), open-ended questions in quantitative research add value to the study, because respondents they afford respondents an opportunity to add additional data to complement the data collected through closed-ended questions. Asking this question assisted researcher in understanding the participants better and knowing which CEDU Master's students needed to attend an IL skills programme. This raised the alarming question as to how the library is training those students who are not able to attend face-to-face training, as some respondents indicated that they were studying abroad, while others indicated that they were far from their library branches.

The challenge of geographical distance is highlighted by Gumbo (2016:11), who points out that remote students are not able to attend face-to-face training due to work-related or family responsibilities. Full-time employed distance learners only find time in the

evenings and during weekends, if they are not working over weekends as well. However, some are working evening and night shifts.

There is a need for open distance libraries to remind themselves about the aim of ODL, which is to bridge the geographic distance between the library and all students registered for an ODL programme. Therefore, libraries should not expect students to attend face-to-face training only. There is a need for web training programmes in order to reach all students 24/7. More information is addressed in Section 5.6.5 and results reveal that library skills training does predict access to information.

The following two questions were also in the form of open-ended questions that were follow-up questions to the closed questions used to establish the phenomenon meaning from the participants' views as advised by Creswell (2014:19).

5.8.2 Section A. Question QA2 (UNISA Library online services)

In the past 12 months, have you used the UNISA Library online services (information services) that are provided over the Internet)?

The open-ended question was: *If your answer is no, why?*

Eighty-seven participants (81.3%) answered YES, compared to 20 respondents (18.7%), who responded NO.

The reasons provided by the respondents are as follows:

- *Could not get through due to Internet problems as I am living outside South Africa;*
- *I always visit the nearby UNISA Library;*
- *I don't know how to use it;*
- *No valid reasons;*
- *Not been able to access the material I wanted;*
- *There was not much information I needed from there; and*

- *I don't think there is information I need right now, since I am very busy with my dissertation final chapters, I think I am equipped with all the information I need.*

5.8.3 Section A. Question QA3 (myLife email and myUnisa access)

Have you claimed your myLife email address, joined myUnisa and obtained your myUnisa password?

The open-ended question was in Section A. Question 4: *If your answer is no, why?*

Hundred-and-two respondents (95.3%) claimed their myLife email address and joined myUnisa, compared to 54.7%, who did not claim their myLife email account and did not join myUnisa. Here are the reasons provided by the respondents:

The responses included: *I did not know how to use it;* and *I used other sources; don't always have Internet.*

The majority of participants (95.3%) claimed their myLife email account and joined myUnisa platform. The 4.7% of respondents, who did not claim their myLife email account and did not join myUnisa, also needed help in using myUnisa and their myLife email accounts, meaning no learners should be without access.

5.9 Chapter summary

This chapter focused on the description of the data, as represented in a sample, by using the descriptive statistics (means, standards deviation and frequencies) and the investigation of the statistical nature of the relationship between computer literacy, the use of ICTs, library skills training and the library's electronic document delivery services and communication channels.

The results indicate that the majority of students positively perceived the vital role played by ICTs, library skills training and computer literacy as enablers in communicating with UNISA Library and accessing the UNISA Library's online resources. The results of the

correlation statistics study demonstrate a positive relationship between the use of ICTs, library skills training, computer literacy and the library's electronic document delivery services and communication channels. Chapter 6 will present the conclusions, limitations and recommendations related to this study.

CHAPTER 6: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

In the context of the client training function of the academic library, the primary purpose of this study was to investigate the use of ICTs in document delivery services and the perceptions and experiences of library clients regarding factors that prevent or inhibit them from effectively accessing and using the UNISA Library's document delivery services. Against this background, the final chapter for this study this chapter presents the limitations of the conclusions, and recommendations for ODL institutions and possible avenues for future research, respectively.

In order to determine whether the objectives of the study have been met, the research objectives are also summarised.

6.1 Research methodology

To achieve the main objective, the researcher employed a quantitative method and a non-probability convenience method to identify the participants of the study and to collect data. A total of 107 participants were enrolled in this cohort, all of whom were Master's students in the CEDU at UNISA. These participants were students enrolled for an ODL programme at UNISA. They participated in the study through a cross-sectional design.

Although the quantitative approach was embodied in the questionnaire applied to the study sample (107 participants), the researcher inserted an open-ended question and two follow-up questions to capture the qualitative elements of this study.

6.1.1 Hypotheses

The following five hypotheses were tested in the study:

- A statistically significant relationship between computer literacy, the use of ICTs, library skills training and communication services in the UNISA Library;
- A statistically significant relationship between computer literacy, the use of ICTs, library skills training and document delivery;

- Whether computer literacy, the use of ICTs and library skills training do not predict the means of access to the Internet;
- Whether computer literacy, the use of ICTs and library skills training do not predict access to information; and
- Whether computer literacy, the use of ICTs and library skills training do not predict the communication channel.

6.1.2 Conclusions

This section discusses the conclusions concerning the specific literature objectives of, and the empirical findings obtained in the present study.

6.1.2.1 Conclusions regarding the specific literature objectives of the study

This study aimed at examining whether a relationship exists between the use of ICTs and the document delivery services at an ODL learning institution by focusing on Master's students in the CEDU at UNISA. The focus of the literature study was, therefore, mainly to examine what document delivery entails; whether ICTs are used in document delivery services provided by an ODL institution; and whether the required skills to access information and to request information resources through the library's communication channels are acquired through computer/IL programmes.

6.1.2.2 Conclusions regarding the specific literature of the study

The literature review set out to conceptualise the use of ICTs in DD. The conclusions that were drawn from this conceptualisation are presented in the following sections.

Conceptualisation of the use of ICTs

Based on the literature, the use of ICTs in distance education has witnessed the previous model of correspondence education evolving into the online education model (Sacchanand 2002:2). Arinto (2013:167) argues that the observed, open universities and distance learning institutions have shifted from a print-based mode of delivery to an online mode of delivery. According to Rammutloa (2017:3), the expansion of ICTs has helped ODL institutions to reach remote students. The ICTs are perceived as an essential tool for the support and encouragement of independent learning (Wiyaka & Rukmini 2018:59).

The ICT concept merges from two technologies, namely: information technology (IT) and communication technology (CT) which has been joined together to form ICT (Odhiambo 2008:1). According to Constable (2007:1), the merging of these two technologies has contributed to the integration of information processing and communication. Distance learning institutions rely on ICTs to reach students residing all over the world and to provide them with a competitive education of a high standard.

Previous studies evidenced that the use of ICTs bridge the distance between students and the institution, while also being used to support service delivery to remote students (Raubenheimer 2014:b4). The use of ICTs was found to be effective in ensuring effective teaching and learning for researchers (Moyane, Dube & Hoskins 2015:28; Rantlha 2017:38).

Looking at the geographical finding, the following observations can be made:

- UNISA is open to all learners without discrimination from any country of origin;
- The fact that students feel/do not feel motivated to use technologies may reflect either a lack of training related to the use of ICTs or they do not have enough support to access higher education infrastructures; and
- Students from the Gauteng region have more opportunities to access the employment market than students from other provinces in South Africa.

Conceptualisation of document delivery services

The conceptualisation of document delivery was covered in Chapters 2 and 3. Based on the literature review, *document delivery services* are defined as the act of moving the physical container of information, irrespective of hard copy or electronic format, from a supplier to a user and back again if necessary (George 1993). Document delivery services are described as the process of responding to a user's request with either a physical or paper or film copy of an artifact, or an electronic representation of the requested items (Jones 2006:45). According to Ewing (2009:681), document delivery plays a significant role in distance learning and aims at being a service to all students irrespective of whether they are on or off campus.

Previous research report that ICTs positively influence the support of DD (Tiwari & Sahoo 2013:1). ICTs were found to be the driving forces behind the evolution of digital library services (Chowdhury & Foo 2012). The investigation into document delivery services at the UNISA Library revealed that the service has various technologies to speed up document delivery related services, such as access to information and the delivery of requested items.

McPherson (2015:317) and Dube (2017:107) respectively report that the IL of the student could be associated positively or negatively with document delivery services, when it comes to locating and accessing library resources. An investigation into the IL training at the UNISA Library revealed that the Library offers various training courses that support students in the use of ICTs.

The use of ICTs and other technologies refers to the use of Web 2.0 and Web 3.0 technologies to reach open distance learners remotely by using online training programmes (Rantlha 2017:38). Online web training programmes are, therefore, important in order to reach distance learners.

6.1.2.3 Conclusions regarding the specific objectives of the study

Research Objectives 1 and 2

As indicated in Table 5.8, Research Objectives 1 and 2, which involved determining the statistical nature of the relationship between the use of ICTs and communication services in the UNISA Library, were achieved.

The result revealed a relationship between the use of ICTs and communication services in the UNISA Library and DDS. The following associations were found:

- Participants who perceived positive computer literacy training seemed to have a high level of computer library skills and competency and demonstrated a high level of proficiency in IL skills;

- Computer literacy associated negatively with the communication channels;
- Computer literacy associated positively with competency in library skills;
- Competency in library skills associated positively with IL skills, the support role of ICTs, contribution to ICTs' effectiveness, access to information, library skills training and communication channels;
- IL skills associated positively with the support role of ICTs, contribution to ICTs' effectiveness, access to information, library skills training and communication channels; and
- Support role of ICTs associated positively with ICTs' effectiveness, access to information, library skills training and communication channels.

Research Objective 3

Tables 5.9–5.11 address this objective, namely, to determine if the level of computer literacy, the use of ICTs and library skills training predict access to the Internet. As the results captured in these tables indicate, no association was found between computer literacy, the use of ICTs and library skills training and Internet access to the Internet. Therefore, it can be concluded that computer literacy, the use of ICT, and library skills training do not act as predictors of access to the Internet.

Research Objective 4

This research objective was to determine whether computer literacy, the use of ICTs and library skills training predict access to information.

The results, captured in Table 5.10, reveal that only library skills training act as a predictor of access to information. Competency on library computer skills, information literacy skills, support role of ICTs and contribution of ICT's to the document delivery effectiveness did not act as predictors of access to information.

Research Objective 5

The results involved in this research objective, which was to determine if the level of computer literacy, the use of ICTs and library skills training predict communication channels, are drawn from Table 5.11.

No association was found between computer literacy, the use of ICTs and library skills training and communication channels. Therefore, it is possible to conclude that computer literacy, the use of ICTs and library skills training do not act as predictors of the communication channel.

6.2 Limitations of the study

The limitations of this study concerning the literature review and the empirical study are discussed in the following sections.

6.2.1 Literature review

The literature review was limited to the use of ICTs and document delivery services and the need for relevant skills through IL training to make effective use of those services. Although other models and theories were mentioned, they were not used, mainly due to the methodological and paradigmatic boundaries of the study, which have limited the research conducted on the relationship between the use of ICTs and document delivery services in the context of an ODL institution.

6.2.2 Empirical study

The findings presented in this study are limited and cannot be generalised, which implies that they cannot be applied to evaluate the use of ICTs and document delivery services. The following limitations of the empirical study should be considered when interpreting the results:

- The study was limited to 107 students enrolled at an ODL institution in South Africa;
- The convenience sampling technique was used and, therefore, the results cannot be generalised to the entire population;

- This study is cross-sectional and inferences could not be drawn about causation, because the correlations between the two variables were interpreted rather than established;
- The questionnaires used were self-reported and therefore, they may be considered as subjective and biased to some degree.

Despite these limitations, the findings of this study do provide new knowledge regarding the relationship between the use of ICTs and document delivery services in a South African ODL institution.

6.3 Recommendations

6.3.1 Recommendations for the field of Information Science

The practical value of this study lies in the fact that the use of ICTs relates positively and negatively to document delivery services. Therefore, ODL institution has a crucial role to play in providing adequate ICT infrastructures for librarians to offer online computer and library skills/information literacy training programmes to support students to acquire these skills and them to good use.

ODL institutions should provide all their librarians with the appropriate training, required knowledge and skills to offer online computer and library skills/information literacy training programmes to support student's to access and effectively use the required services and information.

The use of ICTs should form part of information literacy skills training, as it may help students to be actively and cognitively able to locate and identify the required and needed information. Therefore, ODL institutions should ensure that both librarians and students possess the required skills and competencies.

If they do not know how to search, navigate, locate, or retrieve information online, the use of ICTs affects students negatively. Moreover, if librarians are not fully trained, they are

at a loss when it comes to supporting students effectively. Therefore, all UNISA librarians should be developed on how to use the ICTs in libraries in the changing environment.

6.3.2 Recommendations for future studies

The findings of this study show a need for future research in exploring the association between the use of ICTs and document delivery services. It is recommended that future research should be undertaken into the limitations involved in this study, which was limited to one South African ODL tertiary institution and 107 students enrolled in the CEDU. A future researcher should, therefore, make use of a randomised sampling technique with a larger sample.

The study was cross-sectional, which made it difficult to establish the causal effect relationship among the variables under investigation. Consequently, longitudinal studies would be suitable to determine the influence of the variables that were tested in the study on the use of ICTs and demographic characteristics.

Future studies should apply combined methodologies that offer a broad understanding of the relationship between the use of ICTs and document delivery services.

6.4 Conclusion

This chapter, which concluded the study, focused on the conclusions and the limitations of the research and provided recommendations pertaining to the use of ICTs in document delivery services. In this chapter, it was explained that the research objectives were achieved and recommendations were made for future research in the field of information and communication technologies, information literacy and document delivery services.

This study revealed positive results, which can be viewed as a positive step in support of the development of training programmes to be used by librarians when training clients who visit the library and also online IL training programmes to be developed, so that they can ensure a promising future for all students involved in the research. In this way, ODL institutions have a crucial role to play in providing adequate ICT infrastructures for

librarians, so that they can offer IL training programmes to equip students with adequate information literacy skills.

REFERENCES

- Adeleke, DS & Emeahara, EN. 2016. Relationship between information literacy and use of electronic information resources by postgraduate students of the University of Ibadan. *Library Philosophy and Practice*, 1381, April 2016.
<https://digitalcommons.unl.edu/libphilprac/1381/> [Accessed 23 August 2019].
- Ahenkorah-Marfo, M & Teye, V. 2010. Sustaining information delivery: the experience of Kwame Nkrumah University of Science and Technology Library, Kumasi, Ghana. *Journal of Interlibrary Loan, Document Delivery & Electronic Reserves*, 20(4):207–220.
<http://search.ebscohost.com/login.aspx?direct=true&db=lih&AN=53466143&site=ehost-live> 10.1080/1072303X.2010.503164 [Accessed 12 January 2019].
- Alemna, AA.1997. The future of document delivery for developing countries: a view from West Africa. *Interlending and Document Supply*, 25(1):5–7.
- American Library Association (ALA). 2000. *Information Literacy Competency Standards for Higher Education (ILCSHE)*.
<https://alair.ala.org/bitstream/handle/11213/7668/ACRL%20Information%20Literacy%20Competency%20Standards%20for%20Higher%20Education.pdf?sequence=1&isAllowed=y> [Accessed 5 August 2019].
- American Library Association (ALA). 2007. *Interpretations of the Library Bill of Rights*.
www.ala.org/advocacy/intfreedom/librarybill/interpretations/ [Accessed 20 April 2016].
- American Library Association (ALA). Presidential Committee on Information Literacy. 1989. *Final Report*. <http://www.ala.org/acrl/publications/whitepapers/presidential> [Accessed 11 February 2019].
- American Library Association (ALA). Presidential Committee on Information Literacy. 2006a. *A progress report on information literacy: an update on the American Library Association: Final Report*.
<http://www.ala.org/acrl/publications/whitepapers/progressreport> [Accessed 14 October 2018].

- American Library Association (ALA). Presidential Committee on Information Literacy. 2006b. *Final Report*. <http://www.ala.org/acrl/publications/whitepapers/presidential> [Accessed 21 June 2018].
- Amusa, OI, Bello, TO, Omotoso, TO & Osunrinade, L. 2016. Influence of information literacy skills on information needs and use among banking personnel in Ogun State, Nigeria. *Library Philosophy and Practice*, 1389. <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=3797&context=libphilprac> [Accessed 12 May 2018].
- Anasi, S & Ali, H. 2012. Resource sharing challenges and prospects in Nigerian university libraries. *Interlending and Document Supply*, 40(3):156–162.
- Apuke, OD. 2017. Quantitative research methods : a synopsis approach. *Kuwait Chapter of Arabian Journal of Business and Management Review*, 6(11):40–47. <http://platform.almanhal.com/MNHL/Preview/?ID=2-107965> [Accessed 6 July 2018].
- Arinto, PB. 2013. A framework for developing competencies in open and distance learning. *The International Review of Research in Open Distance Learning (IRR ODL)*, 14(1):167–185.
- Arko-Achemfuor, A. 2017. Student support gaps in an open distance learning context. *Issues in Educational Research*, 27(4):658–676.
- Arko-Cobbah, A. 2004. The role of libraries in student-centred learning: the case of students from the disadvantaged communities in South Africa. *International Information & Library Review*, 36:263–271.
- Arnold, J, Sias, J & Zhang, J. 2002. Bringing the library to the students: using technology to deliver instruction and resources for research. *Journal of Library Administration*, 37(1/2):27–37.
- Asikhia, OA & Mohangi, K. 2015. The use of problem-solving training in reducing Mathematics anxiety among Nigerian secondary school students. *Gender & Behaviour*, 13(1):6547–6558.

- Association of College & Research Libraries (ACRL). 2000. *Information Literacy Competency Standards for Higher Education*.
[https://alair.ala.org/bitstream/handle/11213/7668/ACRL Information Literacy Competency Standards for Higher Education.pdf?sequence=1&isAllowed=y](https://alair.ala.org/bitstream/handle/11213/7668/ACRL%20Information%20Literacy%20Competency%20Standards%20for%20Higher%20Education.pdf?sequence=1&isAllowed=y)
 [Accessed 11 February 2019].
- Association of College & Research Libraries (ACRL). 2015. *Information literacy competency standards for higher education*.
<http://www.ala.org/acrl/standards/informationliteracycompetency> [Accessed 13 April 2015].
- Athabasca University. [2016]. <http://www.athabascau.ca/> [Accessed 18 October 2016].
- Athabasca University. 2017. *Mission and mandate*.
<http://www.athabascau.ca/aboutau/mission/> [Accessed 18 October 2017].
- Athabasca University. [2018]. AU Library. Interlibrary Loans.
<http://library.athabascau.ca/BorrowingPrivileges.html> [Accessed 1 November 2018].
- Athabasca University. AU Library. 2018. Library & Scholarly Resources.
<http://library.athabascau.ca/orientations.html> [Accessed 27 September 2018].
- Babbie, E. 2007. *The practice of social research*. 11th ed. Belmont, CA: Thomson Wadsworth.
- Babbie, E & Mouton, J. 2001. *The practice of social research*. Oxford: Oxford University Press.
- Baji, F, Bigdeli, Z, Parsa, A & Haeusler, C. 2018. Developing information literacy skills of the 6th grade students using the Big6 model. *Malaysian Journal of Library and Information Science*, 23(1):1–5.
- Bakker, T. 1999. *Resource sharing in a virtual library environment: user-oriented collection management*. <http://www.sociosite.net/bakker/resovirt.html> [Accessed 8 July 2016].
- Becker, D, Hartle, H & Mhlauli, G. 2017. Assessment of use and quality of library services, accessibility and facilities by students at Cape Peninsula University of Technology. *SA Journal of Library and Information Science*, 83(1):1–25.
- Behr, MD & Hayward, J. 2008. Do off-campus students still use document delivery? Current trends. *Journal of library administration*, 48(3/4):277–293.

- Behrens, SJ. 1992. *Undergraduate library and information skills in a distance learning environment*. Doctoral thesis, University of South Africa, Pretoria.
http://uir.UNISA.ac.za/bitstream/handle/10500/18073/thesis_behrens_sj.pdf?sequence=1&isAllowed=y [Accessed 21 January 2018].
- Behrens, SJ. 1993. User education at tertiary level: a review of recent literature. *South African Journal of Library & Information Science*, 61(3):124–130.
- Bezuidenhout, R, Cilliers, F & Davis, C. 2014. *Research matters*. 4th ed. Cape Town: Juta.
- Blazer, C. 2011. Strategies for reducing math anxiety. *Information Capsule*, 1102 (September):1–8.
- Bothma, T, Cosjn, E, Fourie, I & Penzhorn, C. 2008. *Navigating information literacy: your information society survival toolkit*. 2nd ed. Capetown: Maskew Miller Longman.
- Bothma, T, Cosign, E, Fourie, I & Penzhorn, C. 2011. *Navigating information literacy: your information society survival toolkit*. 3rd ed. Capetown: Pearson Education South Africa.
- Brindley, L. 2005. The British Library: its origins, development and future. *Interlending & Document Supply*, 33(2):76–80.
- Britz, J & Lor, P. 2006. The role of libraries in combating information poverty in Africa, in *The impact of technology on Asian, African and Middle Eastern library collections*, edited by RN Sharma. Lanham, Md: Scarecrow Press.
- Bryman, A. 2012. *Social research methods*. 4th ed. Oxford: Oxford University Press.
http://www.academia.edu/30520568/Social_Research_Methods_4th_Edition_by_Alan_Bryman.pdf [Accessed 19 November 2018].
- Buchholz, IM. 2011. *Provision of access to information in academic libraries in Southern Africa : two case studies*. MInf-dissertation, Universit of South Africa, Pretoria.
<http://uir.UNISA.ac.za/handle/10500/4794> [Accessed 26 June 2016].
- Burckel, N. 2006. Library space in the digital age, in *Digital Library development: the view from Kanazawa*, edited by Deanna B.Marcum & Gerald George. Libraries Unlimited:226–241.

- Burk, R. 2006. Self-Service interlibrary loan: a primer for reference staff. *The Reference Librarian*, 45(93):73–82.
- Byrne, A. 2003. Digital libraries: barriers or gateways to scholarly information? *Electronic Library*, 21(5):414–421.
- Callison, D & Preddy, L. 2006. *The blue book on information age inquiry, instruction, and literacy*. London: Greenwood Publishing Group.
- Calvert, HM. 2001. Document delivery options for distance education students and electronic reserve service at Ball State University Libraries. *Journal of Library Administration*, 31(3/4):109–125.
- Cambridge Dictionary. 2019. <https://dictionary.cambridge.org/> [Accessed 15 July 2019].
- Carpenter, GW. 2017. Sampling: methodological issues, in *The SAGE encyclopedia of communication research methods*. Vol. 4, edited by Mike Allen. Thousand Oaks, CA: SAGE. [Accessed 15 February 2019].
- Cavanagh, K. 2014. Brock Library forced to shed journal subscription costs. *BrockNews*, 26 August 2019. <https://brocku.ca/brock-news/2014/12/brock-library-forced-to-shed-journal-subscription-costs/> [Accessed 17 August 2019].
- Chambliss, DF & Schutt, RK. 2013. *Making sense of the social world: methods of investigation*. 4th ed. Thousand Oaks, CA: SAGE.
- Chang, CH. 2011. The influence of user's trait on public e-service usage: a self-service technology perspective. *Asian Social Science*, 7(7):3–11.
- Chatham-Carpenter, A. 2017, in *The SAGE encyclopedia of communication research methods*, edited by Mike Allen. doi: <http://dx.doi.org/10.4135/9781483381411> [Accessed 21 September 2018].
- Chattopadhyay, S. 2014. Learner support services in open distance learning system: case study on IGNOU. *E-prints in Library & Information Science*. <http://eprints.rclis.org/29071/> [Accessed 11 February 2019].
- Chelak, A & Azadeh, F. 2010. The development of union catalogues in Iran: the need for a web-based catalogue. *Interlending and Document Supply*, 38(2):118–125.
- Chevillotte, S. 2009. Information literacy, in *Encyclopedia of Library and Information Sciences*. 3rd ed. New York: Taylor and Francis:2420–2428.

- Chhetri, M & Thakur, BS. 2019. Implementation of RFID technology in libraries: a case study in UPES Library. *Library Philosophy and Practice*, 2344, May 2019. <https://digitalcommons.unl.edu/libphilprac/2344/> [Accessed 24 August 2019].
- Chipeta, GT. 2010. Information literacy (IL) teaching and learning: a literature review. *Inkanyiso: Journal of Humanities and Social Sciences*, 2(1):21–32
- Chowdhury, G & Foo, S. 2012. Digital libraries and open access, in *Digital libraries and information access: research perspectives*, edited by GC and S Foo. London: Facet Publishing:143–154.
- Clarke, A. 2008. *E-learning skills*. 2nd ed. New York: Palgrave Macmillan.
- Coetzee, M. 2012. Distance learning students' graduateness as predictors of their job satisfaction and optimism about future career prospects. *Journal of Social Sciences*, 33(3):305–313.
- Cohen, J. 1988. *Statistical power analysis for the behavioural sciences*. 2nd ed. Hillsdale, NJ: Lawrenbaum.
- Collins, K & Veal, R. 2004. Off-campus adult learners' levels of library anxiety as a predictor of attitude toward the Internet. *Library & Information Science Research*, 26:5–14.
- Committee of Higher Education Libraries of South Africa (CHELSA). 2017. *Annual report, 2017*. <https://chelsa.ac.za/wp-content/uploads/2019/05/chelsa-chairperson-report-2017.pdf> [Accessed 19 August 2019].
- Conner, E. 2009. *An introduction to staff development in academic libraries*. New York: Routledge.
- Constable, FT. 2007. *Training needs for electronic use of information in the College of Law at the University of South Africa*. MInf-dissertation, University of South Africa, Pretoria. <http://uir.UNISA.ac.za/handle/10500/1333> [Accessed 26 February 2016].
- Conway, K. 2011. How prepared are students for postgraduate study? A comparison of the information literacy skills of commencing undergraduate and postgraduate Information Studies students at Curtin University. *Australian Academic & Research Libraries*, 42(2):121–136.
- Cooper, DR & Schindler, PS. 2011. *Business research methods*. New York: McGraw-Hill/Irwin.

- Correia, A & Teixeira, J. 2003. Information literacy: an integrated concept for a safer Internet. *Online Information Review*, 27(5):311–320.
- Creswell, JW. 2009. *Research design: qualitative, quantitative and mixed approaches*. 3rd ed. Thousand Oaks, CA: SAGE.
- Creswell, JW. 2014. The selection of a research approach, in *Research design: qualitative, quantitative, and mixed methods approaches*. 4th ed. Los Angeles: SAGE:3–23. https://in.sagepub.com/sites/default/files/upm-binaries/55588_Chapter_1_Sample_Creswell_Research_Design_4e.pdf [Accessed 9 February 2019].
- Creswell, JW & Creswell, JD. 2018. *Research design: qualitative, quantitative and mixed methods approaches*. 5th ed. Thousand Oaks, CA: SAGE.
- Darch, C. 1999. Academic library consortia in contemporary South Africa. *Library Consortium Management: An International Journal*, 1(1/2):23–32. http://www.colindarch.info/document_files/990000_Library_consortia_in_SA.pdf [Accessed 4 August 2016].
- Dawson, J. 2018. Methodological assumptions, reliability and validity, in *Analysing qualitative survey data for business and management students*. Thousand Oaks, CA:SAGE:11–20. <http://dx.doi.org/10.4135/9781473983311> [Accessed 9 February 2019].
- De Haan, J. 2004. A multifaceted, dynamic model of the digital divide. *IT & Society*, 1(7):68–88.
- De Jager, K & Nassimbeni, M. 2005. IL and quality assurance in South African higher education institutions. *Libri*, 55(1):31–38.
- Deas, AJ. 2017. *Constructing a psychological retention profile for diverse generational groups in the higher educational environment*. D.Phil thesis, University of South Africa, Pretoria. <http://hdl.handle.net/10500/23304> [Accessed 19 August 2019].
- dela Pena-Bandalaria, M. 2007. Impact of ICTs on open and distance learning in a developing country setting: the Philippine experience. *International Review of Research in Open and Distance Learning*, 8(1):1–15.

- Dell, EY. 2007. Access to medical literature: interlibrary borrowing and lending in an electronic age. *Journal of Interlibrary Loan, Document Delivery & Electronic Reserve*, 17(1–2):7–43.
- Desta, AG. 2016. *The use of electronic information resources by postgraduate students at UNISA regional learning centre in Ethiopia*. Master's dissertation, University of South Africa, Pretoria. <http://uir.unisa.ac.za/handle/10500/22078> [Accessed 1 May 2018].
- Dogrueer, N, Eyyam, R & Menevis, I. 2011. The use of the Internet for educational purposes. *Procedia: Social and Behavioral Sciences*, 28 (December):606–611.
- Du Toit, G. 2015. *Information-seeking behaviour of the open window school of visual communication students: a case study*. MInf-dissertation, University of South Africa, Pretoria.
- Dube, TV. 2017. *Information technology skills and competencies of staff members in the Information Resource Distribution Directorate of the University of South Africa Library*. Master's dissertation, University of South Africa, Pretoria. <http://hdl.handle.net/10500/22932> [Accessed 21 June 2018].
- Dudovskiy, J. 2017. *Convenience sampling*. Research Methodology. <https://research-methodology.net/sampling-in-primary-data-collection/convenience-sampling/> [Accessed 20 Nov. 2017].
- Eisenberg, MB. 2008. Information literacy: essential skills for the information age. *DESIDOC Journal of Library & Information Technology*, 28(2):39–47. <http://www.ischool.washington.edu/mbe> [Accessed 20 December 2018].
- Esterhuizen, EM & Kuhn, S. 2010. CHELSA draft guidelines on information literacy: paving the way to a South African national framework? *Innovation*, 41 (December):84–106.
- Ewing, RL. 2005. Document delivery, in *Encyclopedia of distance learning*, edited by Caroline Howard, Judith V Boettcher, Lorraine Justice, Karen Schenk, Patricia L Rogers & Gary A Berg. Hershey, PA: Idea Group Reference:681–682
- Ewing, R. 2009. Document delivery, in *Encyclopedia of distance learning*. 2nd ed., edited by SP Rogers, C Howard, L Justice & K Hershey. PA: IGI Global:734–735. doi: 10.4018/978-160566-198-8.ch103 [Accessed 6 October 2018].

- Farmer, L. 2011. Technology-enhanced information in adult education, in *Encyclopedia of information communication technologies and adult education integration*, edited by Victor CX Wang:184–203. Hersey, PA: IGI Global. <https://0-www.igi-global.com/oasis.UNISA.ac.za/gateway/chapter/full-text-pdf/46574> [Accessed 9 February 2019].
- Ferreira, L. 2014. *Nurturing auditing student's attributes at an open distance learning institution*. MComm-dissertation, University of South Africa, Pretoria. http://uir.UNISA.ac.za/bitstream/handle/10500/14361/dissertation_ferreira_l.pdf?sequence=1 [Accessed 24 February 2019].
- Ferreira, JG & Venter, E. 2006. *Barriers to learning at an open distance learning institution*. https://www.saide.org.za/resources/Conf%202010/Ferreira_JG_and_Venter_E_Barriers_to_learning_at_an_ODL_institution.pdf [Accessed 19 February 2019].
- Fourie, I. 2003. *Library and information service structure in South Africa*. <http://www.dissanet.com/ifla/pdf/LIASA%2003%20Fourie.pdf> [Accessed 17 August 2019].
- Fourie, I & Ten Krooden, E. 1999. Providing learning opportunities for teaching research information skills. *Progressio*, 21(2). http://uir.UNISA.ac.za/bitstream/handle/10500/115/progress_v21_n2_a7.pdf?sequence=1&isAllowed=y [Accessed 12 February 2019].
- Fraser, FM, Dolabaille, A & Winter, M. 2011. The way forward: improving interlibrary loan service delivery at a Caribbean academic library. *Journal of Interlibrary Loan, Document Delivery & Electronic Reserve*, 21(5):235–252.
- Fullwood, R & Rowley, J. 2017. An investigation of factors affecting knowledge sharing amongst UK academics. *Journal of Knowledge Management*, 21(5):1254–1271.
- FUTALIB. 2013. *Use of information and communication technology (ICT) in the library (library automation)*. FUTALIB, 13 January 2013. <https://futalib.wordpress.com/2013/01/13/use-of-information-and-communication-technology-ict-in-the-library-library-automation/> [Accessed 5 August 2019].

- Garrison, JA & Grudzien, P. 2007. Off-campus user behavior: are they finding electronic journals on their own or still ordering through document delivery? *Journal of Electronic Resources in Medical Libraries*, 4(1/2):75–85.
- George, L. 1993. Fee-based information services and document delivery. *Wilson Library Bulletin*, 67(6):41–44.
- Goldner, M & Birch, K. 2012. Resource sharing in a cloud computing age. *Interlending & Document Supply*, 40(1):4–11.
<https://www.emerald.com/insight/content/doi/10.1108/02641611211214224/full/pdf?title=resource-sharing-in-a-cloud-computing-age> [Accessed 24 August 2019].
- Gozo, AJ. 2016. *Enhancing access to library services through the formation of partnerships*. Paper presented at the IFLA 2016, Satellite Meeting: African Section, Athens, Ohio (United States), 11–12 August 2016.
<http://library.ifla.org/2078/1/S27-2016-gozo-en.pdf> [Accessed 18 August 2019].
- Gray, D. 2005. *Doing research in the real world*. 4th ed. London: SAGE.
- Gregorian, V. 2002. White House Conference on School Libraries: keynote address. *Teacher Librarian*, 30(1):70.
<https://search.proquest.com/openview/56e51a4986c9862dbd16e1b4a84ac2db/1?pq-origsite=gscholar&cbl=38018> [Accessed 23 August 2019].
- Gregory, C. 2008. ‘But I want a real book’: an investigation of undergraduates’ usage and attitudes toward electronic books. *Reference and User Services Quarterly*, 47(3):266–273.
- Groeling, J & Boyd, KA. 2009. The impact of distance education on libraries. *Theological Librarianship*, 2(1):35–44.
https://www.researchgate.net/publication/26626374_The_Impact_of_Distance_Education_on_Libraries/link/0f3171f13829de2216084953/download [Accessed 19 August 2019].
- Gross, M & Latham, D. 2011. What’s skills got to do with it? Information literacy skills and self-views of ability among first-year college students. *Journal of the American Society for Information Science and Technology*, 63(3):574–583.
- Guba, E. 1990. The alternative paradigm dialog, in *The paradigm dialogue*, edited by EG Guba. Thousand Oaks, CA: SAGE:17–27.

- Gumbo, M. 2016. *Online learning experiences of students in the Med in open and distance learning: a phenomenography of the dual University initiative*. MEd-dissertation, University of South Africa, Pretoria.
http://uir.UNISA.ac.za/bitstream/handle/10500/21799/dissertation_gumbo_mt.pdf?sequence=1&isAllowed=y [Accessed 30 November 2018].
- Gyimah, MW. 2011. *Use of the library in a teachers' college of education in Botswana: a case study*. MInf-dissertation, University of South Africa. Pretoria
<http://uir.UNISA.ac.za/handle/10500/4650> [Accessed 3 September 2017].
- Harland, N & Holey, E. 2011. Research and learning methodologies: including open-ended questions in quantitative questionnaires: theory and practice. *International Journal of Therapy and Rehabilitation*, 18(9):482–486.
- Hart, G & Davis, M. 2010. Challenges for information literacy education at a university of technology. *Innovation*, 42 (December):25–41.
- Hart, G & Kleinveldt, L. 2011. The role of an academic library in research: researchers' perspectives at a South African University of Technology. *South African Journal and Information Science*, 77(1).
- Hashim, LB & Mokhtar, W. 2012. Preparing new era librarians and information professionals: trends and issues. *International Journal of Humanities and Social Science*, 2(7):151–156.
- Henderson, F. 1992. Relationship with users, in *Information technology in special libraries*, edited by Margaret Britting. London: Routledge:98–106.
- Hilyer, L. 2002. Interlibrary loan and document delivery in the larger academic library: a guide for university, research and larger public libraries. *Journal of Interlibrary Loan, Document Delivery and Information Supply*, 13(1/2):1–29.
- Hlongwane, I. 2014. *Recognition of prior learning (RPL) implementation in Library and Information Science (LIS) Schools in South Africa*. D Litt et Phil-thesis, University of South Africa, Pretoria. <http://uir.UNISA.ac.za/handle/10500/18312> [Accessed 18 February 2019].
- Hornby, AS, Ashby, M & Wehmeier, S. 2000. Oxford advanced learner's dictionary for current English. 6th ed. Oxford: Oxford University Press.

- Hoskins, R & Stilwell, C. 2011. Library funding and journal cancellations in South Africa University libraries. *South African Journal of Libraries and Information Science*, 77(1):51–63. <http://sajlis.journal.ac.za/pub/article/viewFile/66/58> [Accessed 6 August 2016].
- Hylen, J. *Open educational resources: opportunities and challenges*. <http://www.oecd.org/education/ceri/37351085.pdf> [Accessed August 2019].
- Ilogho, J & Nkiko, C. 2014. *Information literacy search skills of students in five selected private universities in Ogun State, Nigeria: a survey*. https://www.researchgate.net/publication/280048611_Information_Literacy_Search_Skills_of_Students_in_Five_Selected_Private_Universities_in_Ogun_State_Nigeria_A_Survey [Accessed 12 January 2019].
- International Federation of Library Association and Institutions (IFLA). 2009. *International resource sharing and document delivery: principles and guidelines for procedure*. <http://www.ifla.org/files/assets/docdel/documents/international-lending-en.pdf> [Accessed 7 August 2015].
- International Federation of Library Association and Institutions (IFLA). 2015. *Guidelines for best practice in interlibrary loan and document delivery*. <https://www.ifla.org/files/assets/docdel/documents/guidelines-best-practice-ill-dd-en.pdf> [Accessed 17 August 2019].
- International Federation of Library Association and Institutions (IFLA). 2018. *IFLA/UNESCO Manifesto for Digital Libraries*. <https://www.ifla.org/publications/iflaunesco-manifesto-for-digital-libraries> [Accessed 17 August 2019].
- International Federation of Library Association and Institutions (IFLA). 2019. <https://www.ifla.org/> [Accessed 24 February 2019].
- International Federation of Library Association and Institutions (IFLA). Document Delivery and Resource Sharing Section. 2014. Action plan, 2013–2015. [Accessed 17 August 2019].
- Islam, S & Islam, N. 2006. Information and communication technology (ICT) in libraries: a new dimension in librarianship. *Asian Journal of Information Technology*, 5(8):809–817.

- Jacobson, T & Mark, B. 2000. Separating wheat from chaff: helping first-year students become information savvy. *The Journal of General Education*, 49(4):256–278.
- Jiyane, GV & Onyanacha, OB. 2010. Information literacy education and instruction in academic libraries and LIS schools in institutions of higher education in South Africa. *South African Journal of Libraries and Information Science*, 76(1):11–23. <http://sajlis.journals.ac.za/pub/article/view/82> [Accessed 31 May 2016].
- Johnson, AM & Rader, HB. 2002. Library instruction and information literacy, 2001. *Reference Services Review*, 30(4):359–389.
- Jones, CL. 2006. Document delivery in the digital library, in *Digital Library development: the view from Kanazawa*, edited by Deanna B. Marcum & Gerald George. Libraries Unlimited:45–65.
- Judd, C & Kidder, L. 1991. *Research methods in social relations*. New York: Holt, Rinehart and Winston.
- Kaladhar, A, Naick, BRD & Rao, KS. 2018. Digital resources and services awareness, use and other aspects amongst the students of JNTUK-Kakinada: a study. *Library Philosophy and Practice*:1–26. <https://search.proquest.com/docview/2166932312/fulltextPDF/BD55F70050164F87PQ/1?accountid=14648> [Accessed 22 August 2019].
- Kargbo, A. 2002. African universities and the challenge of knowledge creation and application in the information age. *Library Review*, 51(8):411–416.
- Kent, A & Galvin, T. 1977. *Library resource sharing*. Proceedings of the 1976 Conference on Resource Sharing in Libraries, Pittsburgh, Pennsylvania, New York: M. Dekker.
- Kibugi, S. 2013. The use of social media in the dissemination of information in selected public and private university libraries in Kenya. *Innovation: Journal of Appropriate Librarianship and Information Work in Southern Africa*, 2013(47):100–120. <https://www.ingentaconnect.com/content/sabinet/innovation/2013/00002013/00000047/art00008> [Accessed 25 June 2015].

- Kimani, HN. 2014. Information literacy skills among incoming first-year undergraduate students at the Catholic University of Eastern Africa in Kenya, MInf-dissertation, University of South Africa, Pretoria.
http://uir.UNISA.ac.za/bitstream/handle/10500/14461/dissertation_kimani_m.pdf.pdf?sequence=1 [Accessed 23 February 2017].
- Kinengyere, A. 2007. The effect of information literacy on utilization of electronic resources in selected academic and research institutions in Uganda. *The Electronic Library*, 25(3):328–341.
- Kinnucan, MT. 1993. Demand for document delivery and interlibrary loan in academic settings. *Library and Information Science Research*, 15(4):355–74.
- Kisiedu, CO. 1999. Barriers in using new information technology in document delivery in the Third World: prospects for the IFLA project in Ghana. *Interlending & Document Supply*, 27(3):108–116.
- Kriz, HM. 2000. Electronic interlibrary loan delivery with Ariel and ILLiad, in Ariel: Internet transmission software for document delivery, edited by Gary Ives. Binghamton, NY: Harworth Information Press:25–34.
- Kumar, R. 2014. *Research methodology: a step-by-step guide for beginners*. 4th ed. London: SAGE.
- Kwon, D. 2018. North American universities increasingly cancel publisher packages. *The Scientist*, 11 June 2018. <https://www.the-scientist.com/news-opinion/north-american-universities-increasingly-cancel-publisher-packages-64324> [Accessed 20 July 2019].
- Lau, J. 2006. *IFLA guidelines on information literacy for lifelong learning: final draft*. <https://www.ifla.org/files/assets/information-literacy/publications/ifla-guidelines-en.pdf> [Accessed 15 August 2017].
- Lawless, I. 2011. An examination of library anxiety at Cape Breton University. *Evidence Based Library and Information Practice*, 6(3):16–27.
- Leedy, P & Ormrod, J. 2010. *Practical research planning and design*. 9th ed. New York: Pearson Education International.

- Lewis-Beck, MS, Bryman, A & Liao, FT. 2004. Open-ended question, in *The SAGE encyclopedia of social science research methods*, edited by Michael S. Lewis-Beck, Alan Bryman & Tim Futing Liao. Thousand Oaks, CA: SAGE.
- Liebenberg, H, Chetty, H, Prinsloo, P. 2012. Student access to and skills in using technology in an open and distance learning context. *The International Review of Research in Open and Distributed Learning*, 13(4):250–268.
<https://www.learntechlib.org/p/49317/> [Accessed 9 August 2019].
- LoBiondo-Wood, GL & Haber, J. 2006. *Nursing research: methods and critical appraisal for evidence-based practice*. Missouri: Mosby Elsevier.
- LoBiondo-Wood, G & Haber, J. 2010. *Nursing research: methods and critical appraisal for evidence-based practice*. 7th ed. St. Louis: Elsevier.
- LoBiondo-Wood, G & Haber, J. 2014. *Nursing research: methods and critical appraisal for evidence-based practice*. 8th ed. St. Louis, Missouri: Elsevier.
- Lockhart, J & Majal, S. 2012. *The effect of library staff training and development on the user experience : a case study at the Cape Peninsula University of Technology (CPU)*, in Proceedings of the 33rd Annual IATUL Conference, Singapore.
<http://docs.lib.purdue.edu/iatul/2012/papers/44> [Accessed 21 January 2019].
- Lor, P. 2003. What prospects for national libraries in Africa? A South African Perspective. *Alexandria*, 15(3):141–150. doi: [10.1177/095574900301500302](https://doi.org/10.1177/095574900301500302) [Accessed 25 August 2019].
- Mafenya, N. 2016. *Effective assessment in open distance and e-learning: using the signature course at the University of South Africa as a model for future practice*. Doctoral thesis, University of South Africa, Pretoria,
http://uir.UNISA.ac.za/bitstream/handle/10500/21905/thesis_mafenya_np.pdf?sequence=1&isAllowed=y [Accessed 7 August 2019].
- Majtenyi, C. 2015. "Big 5" academic publishers taking big profits, says study. *BrockNews*, 26 August 2019. <https://brocku.ca/brock-news/2015/06/big-5-academic-publishers-taking-big-profits-says-umontreal-study/> [Accessed 26 August 2019].
- Makoe, M. 2010. *The suitability of OER in open distance learning*.
<http://uir.UNISA.ac.za/handle/10500/3713> [Accessed 19 February 2019].

- Makondo, F & Akakandelwa, A. 2009. An evaluation of usage of electronic journals under the Zambia Library Consortium. *Zambia Library Association Journal*, 24(1/2):10–19. <https://journals.co.za/docserver/fulltext/zambia/24/1-2/407.pdf?expires=1544325882&id=id&accname=guest&checksum=761CF1D42F5F2030F5F7707EE7511202> [Accessed 12 November 2018].
- Mbambo-Thata, B. 2010. Assessing the impact of new technology on internal operations, with special reference to the introduction of mobile phone services at UNISA Library. *Library Management*, 31(6):466–475.
- Mbambo-Thata, B. 2013. *Collaboration through partnership at UNISA Library: extending library services to students wherever they are*, in Proceedings of the 34th Annual IATUL Conference, Cape Town. <http://docs.lib.purdue.edu/iatul/2013/papers/25> [Accessed 24 November 2016].
- Mbambo-Thata, B. 2014. *Three pillars informing UNISA Library services*. (Unpublished).
- McKenzie, L. 2019. University of Iowa drops hundreds of journal subscriptions. *Insider Higher Ed*, 5 June 2019. <https://www.insidehighered.com/news/2019/06/05/university-iowa-drops-hundreds-journal-subscriptions> [Accessed 11 July 2019].
- McMillan, JH & Schumacher, S. 2001. *Research in education a conceptual introduction*. 5th ed. New York: Longman.
- McPherson, MA. 2015. Library anxiety among university students: a survey. *IFLA Journal*, 41(4):317–325.
- Mitonga-Monga, J. 2015. *The effects of ethical context and behaviour on job retention and performance-related factors*. Doctoral thesis, University of South Africa, Pretoria. http://uir.UNISA.ac.za/bitstream/handle/10500/19882/thesis_mitonga-monga_j.pdf?isAllowed=y&sequence=1 [Accessed 26 February 2019].
- Mnkeni-Saurombe, N. 2015. Information literacy: a cornerstone for open distance learning at the University of South Africa. *Journal of Librarianship and Information Science*, 47(2):156–165.

- Mogiba, NC. 2018. *Utilising radio-frequency identification technologies as knowledge management enablers in academic libraries: a case study of the University of South Africa*. MInf-dissertation, University of South Africa, Pretoria.
<http://uir.unisa.ac.za/handle/10500/25322> [Accessed 6 August 2019].
- Mohsenzadeh, F & Isfandyari-Moghaddam, A. 2009. Application of information technologies in academic libraries. *Electronic Library*, 27(6):986–998.
- Moira, B & Stubbings, R. 2011. *The SCONUL seven pillars of information literacy: core model for higher education*.
<https://www.sconul.ac.uk/sites/default/files/documents/coremodel.pdf> [Accessed 22 June 2018].
- Montgomery, DC, Peck, EA & Vining, G. 2012. *Introduction to linear regression analysis*. 5th ed. Wiley.
- Moore, M. 1993. Theory of transactional distance, in *Theoretical principles of distance education*, edited by Desmond Keegan. London: Routledge:22–38.
- Moyane, S, Dube, L & Hoskins, R. 2015. Evaluating user education programmes for postgraduate students in the School of Management, Information Technology and Governance at the University of Kwa-Zulu Natal. *South African Journal of Libraries & Information Science*, 81(1):28–40.
- Mugwisi, T. 2015. Role of librarians in teaching information literacy in Zimbabwean and South African Universities: a comparative study. *Mousaion*, 33(1):23–42.
- Murphy, JA. 2014. Library learning: undergraduate students' informal, self-directed, and information sharing strategies. *Canadian Journal of Library and Information Practices and Research*, 9(1):1–20.
<https://journal.lib.uoguelph.ca/index.php/perj/article/vi> [Accessed 19 February 2019].
- Musa, AU. 2016. An appraisal of open access utilization among academic librarians in federal universities in Northwestern states of Nigeria. *Library Philosophy and Practice*, 1374. <http://digitalcommons.unl.edu/libphilprac/1374> [Accessed 17 August 2019].

- Muthu, M. 2013. Resource sharing in libraries: a vital role of consortia. *International Research: Journal of Library & Information Science*, 3(1):210–225.
http://irjilis.com/wp-content/uploads/2013/05/15_IR109.pdf [Accessed 7 October 2018].
- Mwangi, E. 2015. *Information literacy in special libraries: a case study of the High Court Library Milimani Law Courts in Nairobi, Kenya*. Master's dissertation, University of Nairobi. http://erepository.uonbi.ac.ke/bitstream/handle/11295/95272/MWANGI_ESTHER_FINAL_MLIS_PROJECT.pdf?sequence=1 [Accessed 19 February 2019].
- Natarajan, NO, Ravi, S & Ravichandran, P. 2012. Usage of e-resources at Madras Institute of Technology (MIT) Library: a case study. *Asian Journal of Information Science and Technology*, 2(1):48–51.
- National Library of South Africa (NLSA). [2012]. <http://www.nlsa.ac.za/> [Accessed November 2016].
- National Information Standards Organization (NCIP). [n.d.] *NISO Circulation Interchange Protocol*. <http://www.ncip.info/the-protocol.html> [Accessed 18 December 2018].
- National Information Standards Organization (NISO). 2002. *Circulation Interchange Protocol (Z39.83-2002)*.
http://www.ncip.info/uploads/7/1/4/6/7146749/niso_ncip_rfp_guide-revision_july2004.pdf [Accessed 3 April 2017].
- National Information Standards Organization (NISO). 2012. *NISO Circulation Interchange. Part 1, Protocol (NCIP)*. Baltimore, MD: NISO.
https://groups.niso.org/apps/group_public/download.php/8967/z39-83-1-2012_NCIP.pdf [Accessed 25 August 2019].
- National Information Standards Organization (NISO). NCIP Standing Committee. 2011. *Introduction to NCIP*. <http://www.ncip.info/introduction-to-ncip.html>. [Accessed 28 August 2019].
- Ndlovu, V. 2017. *The relationship between hardiness and career adaptability of students studying at technical and vocational education and training (TVET) colleges in Gauteng*. MComm-dissertation, University of South Africa, Pretoria.
<http://uir.unisa.ac.za/handle/10500/23110> [Accessed 27 November 2018].

- Neerpath, S. 2016. Integrating information literacy in the general education module at the Durban University of Technology, South Africa. *Mousaion*, 34(1):43–55.
- Nel, MA. 2015. *Information needs, information seeking behaviour and information use behaviour of researchers at the Faculty of Veterinary Science, University of Pretoria and how these needs are being met by the information support delivered by the Jotello F Soga Library*. MInf-dissertation, University of Pretoria.
<https://repository.up.ac.za/handle/2263/50085> [Accessed 9 August 2019].
- Nelson, SS & Garcia, J. 2003. *Creating policies for results: from chaos to clarity*. Chicago: American Library Association.
- Neuwman, WL. 2006. *Social research methods: qualitative and quantitative approaches*. Boston, MA: Pearson Education International.
- Neuman, WL. 2013. *Basics of social research. Pearson new international ed: Qualitative & quantitative approaches*. 7th ed. Harlow: Pearson Education. <https://0-ebookcentral-proquest-com.oasis.unisa.ac.za/lib/unisa1-ebooks/detail.action?docID=5138494&ticket=ST-36600-A0nUzpPb-IYxYDRSTk64P9fL86g-lmkn-castc02pv> [Accessed 21 November 2018].
- Ngulube, P. 2007. The nature and accessibility of e-government in Sub Saharan Africa. *International Review of Information Ethics*, 7:1–13. <http://fiz1.fh-potsdam.de/volltext/ijie/08092.pdf> [Accessed 3 November 2018].
- Ngulube, P. 2010. Internet use among students at St Joseph’s Theological Institute in South Africa: empirical findings and implications for network literacy. *Mousaion*, 28(1):45–61.
- Ngulube, P. 2016. *Postgraduate workshop on methodology at UNISA*. (Unpublished: College of graduate studies, UNISA, Pretoria).
- Nisha, F. 2018. Implementation of RFID technology at defence science library, DESIDOC: a case study. *Journal of Library & Information Technology*, 38(1):27–33. https://www.researchgate.net/publication/322469277_Implementation_of_RFID_technology_at_defence_science_library_DESIDOC_A_case_study [Accessed 25 August 2019].

- Ntetha, M. 2010. *The access, interaction, use and impact of information and communication technologies among civil servants in the Umhlatuze Area: a social informatics study*. Master's dissertation, University of Zululand.
- Nunnally, J & Bernstein, L. 1994. *Psychometric theory*. New York: McGraw-Hill.
- Nwezeh, CMT. 2010. The use of ICT in Nigerian universities: a case study of Obafemi Awolowo University, Ile-Ife. *Library Philosophy and Practice*, 494.
<http://digitalcommons.unl.edu/libphilprac/494> [Accessed 23 June 2015].
- OCLC. 2014. *Year in review*. <https://www.oclc.org/en/annual-report/2014/year-in-review.html> [Accessed 24 August 2019].
- OCLC. 2015. <https://www.oclc.org/en/home.html> [Accessed 22 February 2017].
- OCLC. 2019. *Together we make breakthroughs possible*.
<https://www.oclc.org/en/about.html> [Accessed 17 February 2019].
- OCLC. ILLiad. 2019. *Interlibrary loan automation for the way you work*.
<https://www.oclc.org/en/illiad.html> [Accessed 26 August 2019].
- OCLC. WorldShare Interlibrary Loan. 2015a. *Automate interlibrary loan staff workflows and help your users quickly get the resources they need*. <https://oclc.org/en/europe/worldshare-ill.html> [Accessed 13 July 2015].
- OCLC. WorldShare Interlibrary loan. 2015b. *Purchasing articles from the British Library using OCLC WorldShare® Interlibrary loan*.
<https://www.oclc.org/content/dam/support/worldshare-ill/documentation/WorldShare-ILL-BLDSS.pdf> [Accessed 30 July 2015].
- OCLC. WorldShare interlibrary loan. 2019. *Automate interlibrary loan staff workflows and help your users quickly get the resources they need*.
<https://www.oclc.org/en/worldshare-ill.html> [Accessed 24 August 2019].
- Odhiambo, MO. 2008. *Need for national ICT policy*.
<http://uir.UNISA.ac.za/handle/10500/3301> [Accessed 19 February 2019].
- Okello-obura, C. 2011. Assessment of the problems postgraduate students face in accessing e-resources at Makerere University, Uganda : a comparison between education and LIS students. *Mousaion*, 29(2):41–60.

- Okpala, H, Benneh, E, Sefu, A & Kalule, E. 2017. Advancing the information literacy skills of postgraduate students in the University of Nigeria. *Journal of Applied Information Science and Technology*, 10(2).
<https://www.jaistonline.org/10vol2/18.pdf> [Accessed 26 November 2018].
- Online Computer Library Center See: OCLC.
- Onwuchekwa, EOO. 2019. *Information literacy and lifelong learning in the National Open University of Nigeria*. D Lit et Phil thesis, University of South Africa, Pretoria.
- Onyancha, OM. 2018. Navigating the rising metrics tide in the 21st century: which way for academic librarians in support of researchers in sub-Saharan Africa? *South African Journal of Libraries and Information Science*, 84(2):11–13.
- Open University (United Kingdom). 2018a. *Training and skills*.
<http://www.open.ac.uk/library/help-and-support/training-and-skills> [Accessed 27 September 2018].
- Open University (United Kingdom). 2018b. *Document delivery and inter-library lending*.
<http://www.open.ac.uk/library/services/document-delivery-and-inter-library-lending> [Accessed 1 November 2018].
- Open University Malaysia (OUM). 2015. <http://www.oum.edu.my/> [Accessed 25 October 2016].
- Open University Malaysia (OUM). Tan Sri Dr Abdullah Sanusi (TSDS) Digital Library. 2013a. <https://library.oum.edu.my/oumlib/> [Accessed 5 October 2016].
- Open University Malaysia (OUM). Tan Sri Dr Abdullah Sanusi (TSDS) Digital Library. 2013b. *Interlibrary loan policy*. <http://library.oum.edu.my/oumlib/announcements/20-11-2012/interlibrary-loan-policy> [Accessed 26 October 2019].
- Open University Malaysia (OUM). Tan Sri Dr Abdullah Sanusi (TSDS) Digital Library. 2013c. Document delivery service request form.
http://library.oum.edu.my/oumlib/dds_form [Accessed 5 October 2016].
- Open University Northern Ireland. 2019. *Open University and Library NI formalise partnership*. <http://www.open.ac.uk/northern-ireland/news/open-university-and-libraries-ni-formalise-partnership> [Accessed 21 July 2019].

- Panda, S & Mishra, S. 2007. E-learning in a mega open university: faculty attitude, barriers and motivators. *Educational Media International*, 44(4):323–338. <http://www.tandfonline.com/doi/abs/10.1080/09523980701680854> [Accessed 30 July 2015].
- Patterson, A. 2008. Linchpin or weakest link? Challenges to current document delivery practice and services. *Interlending and Document Supply*, 36(4):191–195.
- Peet, L. 2019. University of Iowa cancels \$600K in subscriptions. *Field News*, 23 May 2019. <https://www.libraryjournal.com/?detailStory=university-of-iowa-cancels-600k-in-subscriptions> [Accessed 20 July 2019].
- Pickard, A. 2013. *Research methods in information*. 2nd ed. London: Facet Publishing.
- Polger, MA. 2010. Information takeout and delivery study exploring different library: a case study exploring different library service delivery models. *Journal of Hospital Librarianship*, 10:3–22.
- Polit, DF & Beck, C. 2008. *Nursing research: principles and methods: generating and assessing evidence for nursing practice*. 8th ed. Philadelphia: Wolters Kluwer.
- Ponto, J. 2015. Understanding and evaluating survey research. *Journal of the Advanced Practitioner in Oncology*, 6(2):168–171. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4601897/> [Accessed 21 August 2019].
- Porterfield, D. 1999. Messiah College, Grantham, PA, in *What the OCLC interlibrary Loan Service means to me: a collection of essays*. Dublin, Ohio: OCLC Computer Library Centre:189.
- Rabali, H. 2005. *The role of multi-purpose community centre (MPCC) service and information providers towards improving quality of community life: a case of Sebokeng*. Master's dissertation, North-West University, Potchefstroom. <http://dspace.nwu.ac.za/bitstream/handle/10394/985/rabalihahangwivhawe.pdf?sequence=1> [Accessed 6 September 2016].
- Rafique, GM. 2014. Information literacy skills of faculty members: a study of the University of Lahore, Pakistan. *Library Philosophy and Practice*, 1072 (February):1–23. <http://digitalcommons.unl.edu/libphilprac> [Accessed 30 July 2016].

- Rahman, H. 2014. The role of ICT in open and distance education. *Turkish Online Journal of Distance Education*, 15(9):162–169.
- Ramasodi, B. 2009. *The information needs of students library users and the fulfillment thereof at the University of South Africa*. MInf-dissertation, University of South Africa, Pretoria.
http://uir.UNISA.ac.za/bitstream/handle/10500/3171/dissertation_ramasodi_b.pdf?sequence=1&isAllowed=y [Accessed 23 February 2017].
- Rammutloa, M. 2017. *Application of the DeLone and McLeans' s model to assess the effectiveness of an intranet in an open distance learning library*. MPhil-dissertation, Stellenbosch University. <http://uir.UNISA.ac.za/handle/10500/22951> [Accessed 1 June 2018].
- Rantlha, LB. 2017. *Distance students' readiness for an online information literacy programme: UNISA School of Accountancy as a case study*. Master's dissertation, University of Pretoria. <http://uir.UNISA.ac.za/handle/10500/23234> [Accessed 30 October 2018].
- Raubenheimer, J. 1996. Ariel for windows: enhancing electronic document delivery at UNISA. *Library and Information Science*, 64(4):194–198.
- Raubenheimer, J. 2000. Ariel: A resource-sharing support in a South African Consortium. *Journal of Interlibrary Loan, Document Delivery & Information Supply*, 10(4):97–111.
- Raubenheimer, J. 2010. *Enhancing inter-library loans in an open distance learning institution: the UNISA Experience*. ALIA Access, Brisbane, Australia, 1–3 September 2010.
http://uir.unisa.ac.za/bitstream/handle/10500/4173/Paper_Thu_1120_Jenny_Raubenheimer.pdf?sequence=1&isAllowed=y [Accessed 9 August 2019].
- Raubenheimer, J. 2012. Enhancing open distance learning library services with mobile technologies, in *M-libraries 3: transforming libraries with mobile technology*, edited by Mohamed Ally & Gill Needham. London: Facet Publishing:23–35.
- Raubenheimer, J. 2014a. Enhancing resource sharing with a state-of-the-art transportation system in a large open distance learning (ODL) institution in South Africa. *Interlending and Document Supply*, 42(2–3):125–130.

- Raubenheimer, J. 2014b. *Just in time interlending: the ODL perspective*. IFLA, Lyon, France, 16–22 August 2014:1–11.
- Raubenheimer, J. 2016. *Developing library middle management in the context of an open distance learning (ODL) environment in South Africa*. D Lit et Phil-thesis, University of South Africa, Pretoria. [Accessed 30 July 2018].
- Raubenheimer, J & Van Niekerk, JS. 2002. Recent developments in interlending and document supply with a focus on the South African situation. *Interlending and Document Supply*, 30(1):17–24.
- Raubenheimer, J & Van Niekerk, JS. 2015. An overview of the current state of interlibrary loans in South Africa. *Interlending and Document Supply*, 43(2):76–83.
- Ray, K & Day, J. 1998. Students attitude towards electronic information resources. *Information Research*, 4(2). www.informationr.net/ir/4-2/paper54.html [Accessed 1 May 2018].
- Remler, D & Van Ryzin GG. 2011. *Research methods in practice. strategies for description and causation*. London: SAGE.
- Rheiner, VR. 2008. How electronic full-text journals impact interlibrary loan article requests at a small, liberal arts university. *Journal of Interlibrary Loan, Document Delivery and Electronic Reserve*, 18(3):375–386.
- Rigda, C. 2010. Implementing ILLiad: a successful collaboration of the systems and interlibrary loan departments in an academic library. *Journal of Interlibrary Loan, Document Delivery & Electronic Reserve*, 20(2):77–82.
<https://www.tandfonline.com/doi/full/10.1080/10723031003640364> [Accessed 25 August 2019].
- Rosman, T, Mayer, A & Krampen, G. 2016. On the pitfall of bibliographic database searching: comparing successful and less successful users. *Behaviour & Information Technology*, 35(2):1–35.
https://www.zpid.de/pub/research/2016_Rosman_e_al_Pitfalls_of_Database_Searching.pdf [Accessed 27 August 2017].
- Rudasill, LM. 2015. The IFLA trend report: looking beyond the walls in library planning. *Journal of Library Administration*, 55(2):153–164.

- Ruel, E, Wagner, WE & Gillespie, BJ. 2018. The quality of measurement: reliability and validity, in *The practice of survey research: theory and practice*. Thousand Oaks, CA: SAGE:78–100.
- Rumble, J & King, P. 2008. Desktop delivery of printed materials at Auburn University. *Journal of Interlibrary Loan, Document Delivery & Electronic Reserve*, 18(2):229–237.
- Russell, P. 2008. Information literacy support for off-campus students by academic libraries in the Republic of Ireland. *Journal of Information Literacy*, 2(2).
- Sabinet. 2015a. *Library management systems*.
http://www.sabinet.co.za/library_management_systems [Accessed 19 July 2015].
- Sabinet. 2015b. *Overview*. http://www.sabinet.co.za/about_overview [Accessed 15 August 2015].
- Sabinet. 2017. <https://www.sabinet.co.za/> [Accessed 30 March 2017].
- Sabinet. 2018a. *Login to request an interlibrary loan item*.
<http://irequest.sabinet.co.za/request-portal/views/login.xhtml> [Accessed 6 October 2018].
- Sabinet. 2018b. *Online Journals: The African Journals* (previously SA ePublications).
<https://sabinet.co.za/information-services/online-journals> [Accessed 7 October 2018].
- Sabinet. 2019. *Library management systems*. <https://sabinet.co.za/library-solutions/library-management-systems> [Accessed 24 August 2019].
- Sacchanand, C. 2002. *Information literacy instruction to distance students in higher education: librarians' key role*, in 68th IFLA Council and General Conference, Glasgow, Scotland, 18–24 August 2002:1–8 [Accessed 30 March 2017].
- Sahu, AK & Mahapatra, RK. 2016. *Trends and impact of information technology in libraries: a quality paradigm of excellence*.
https://www.researchgate.net/publication/316475283_Trends_and_Impact_of_Information_Technology_in_Libraries_A_Quality_Paradigm_of_Excellence/citation/download [Accessed 18 August 2019].
- Salkind, N. 2012. *100 questions and answers about research methods*. London: SAGE.
- Salkind, N. 2017. *Exploring research*. 9th ed. Harlow: Pearson Education.

- Salomann, H, Kolbe, L & Brenner, W. 2006. Self-services in customer relationships: balancing high-tech and high-touch today and tomorrow. *e-Service Journal*, 4(2).
- Sankari, RL, Chinnasamy, K, Balasubramanian, P & Muthuraj, R. 2013. A study on the use of online public access catalogue (OPAC) by students and faculty members of Unnamalai Institute of Technology in Kovilpatti (Tamil Nadu), *International Journal of Library and Information Studies*, 3(1):17–26.
- Sasso, RM. 2016. Academic library resources and services for online distance learners: an exploratory study. PhD thesis, University of Tennessee.
https://trace.tennessee.edu/utk_graddiss/4160 [Accessed 18 August 2019].
- Schloman, B. 2001. Information resources: information literacy: the benefits of partnership. *Online Journal of Issues in Nursing*, 6(2).
<http://ojin.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Volume62001/No2May01/InformationLiteracy.html>
[Accessed 4 December 2018].
- Schulze, S. 2003. Views on the combination of quantitative and qualitative research approaches. *Progressio*, 25(2):8–20.
http://uir.UNISA.ac.za/bitstream/handle/10500/195/ar_schulze_viewsoncombination.pdf?sequence=1&isAllowed=y [Accessed 12 December 2018].
- Seamans, N. 2001. *Information literacy: a study of freshman students' perceptions with recommendations*. DPhil-thesis, Virginia Polytechnic Institute and State University.
- Selematsela, D. 2005. *Strategies in information literacy instruction academic information services*. D Lit. et Phil thesis, University of Johannesburg.
- Sheikh, H & Tin, T. 2010. A tale of two institutions: collaborative approach to support and develop mobile library services and resources, in *M-libraries 2 a vital library in everyone's pocket*, edited by Needham Gill & Mohamed Ally. London: Facet Publishing:86–95.
- Shillinglaw, N. 2003. Design for a new library: the UNISA library in UNISA's 130th year: dealing with distance education in the electronic era. *Mousaion*, 21(2): 41–61.

- Sife, A, Lwoga, E & Sanga, C. 2007. New technologies for teaching and learning: challenges for higher learning institutions in developing countries. *International Journal of Education and Development using ICT*, 3(2):7–67.
<https://www.learntechlib.org/p/42360/> [Accessed 20 August 2019].
- Simon Fraser University (SFU). [2016]. <https://www.sfu.ca/> [Accessed 5 October 2016].
- Simon Fraser University (SFU) Library. 2018a. *Research Commons: workshops for graduate students & postdoctoral fellows*. <https://www.lib.sfu.ca/about/branches-depts/rc/services/workshops> [Accessed 27 September 2018].
- Simon Fraser. (SFU). 2018b. Inter-Library Loans: information for other libraries. <https://www.lib.sfu.ca/borrow/request-materials/ill/info-other-libraries> [Accessed 1 November 2018].
- South African National Library (SANLiC). 2019. <https://sanlic.org.za/> [Accessed 19 August 2019].
- Southeastern Louisiana University Library. 2019. Interlibrary Loan. <https://www.southeastern.edu/library/about/policies/ill/index.html> [Accessed 25 August 2019].
- Springshare. 2019. LibGuides. <https://springshare.com/libguides/> [Accessed 17 August 2019].
- Tabachnick, BG & Fidell, LS. 2014. Principal components and factor analysis: general purpose and description, in *Using multivariate statistics*. 6th ed. Harlow: Pearson Education:659–730.
- Tavakol, M & Dennick, R. 2011. Making sense of Cronbach’s alpha. *International Journal of Medical Education*, 2:53–55.
- Teddlie, C & Tashakkori, A. 2009. *Foundations of mixed methods research: integrating quantitative and qualitative approaches in the social and behavioural sciences*. Thousand Oaks, CA: SAGE.
- Tiwari, RK & Sahoo, G. 2013. A novel watermarking scheme for secure relationship databases. *Information Societies Journal*, 22(3):101–116.

- Tonta, Y & Ünal, Y. 2006. *The impact of electronic journals on document delivery services*, in Proceedings of the 10th International Conference on Electronic Publishing, Bansko, Bulgaria, 14–16 June 2006:329–338. <http://www.scopus.com/inward/record.url?eid=2-s2.0-84869106451&partnerID=40&md5=5a07df395c806c8f9b8f8ebfbdff6e2> [Accessed 24 January 2019].
- Tredoux, C & Durrheim, K. 2013. *Numbers, hypotheses & conclusions: a course in statistics for the social sciences*. CapeTown: Juta.
- Tshuma, T & Chigada, J. 2018. Analysing information literacy practices at selected academic libraries in Zimbabwe. *South African Journal of Information Management* 20(1). <https://sajim.co.za/index.php/sajim/article/view/976/1307> [Accessed 19 August 2019].
- Tshwane University of Technology. Library and Information Service (LIS). 2019. Inter Library Loans (ILL) and Document Supply. <http://lib.tut.ac.za/library/services/ill.html> [Accessed 26 August 2019].
- Tsui, G. 2000. Faculty attitudes and the development of students critical thinking. *Journal of General Education*, 50(2):1–28.
- Tugli, AK, Zungu, LI, Ramakuela, NJ, Goon, DT & Anyanwu, FC. 2013. Perceptions of students with disabilities concerning access and support in the learning environment of a rural-based university. *African Journal for Physical, Health Education, Recreation and Dance*, December 2013 (Supplement 1:2):356–364. <http://uir.UNISA.ac.za/handle/10500/13447> [Accessed 10 January 2019]
- Tuseku, TD. 2014. *Stakeholder's perceptions on the management of the 2011 electoral processes in the Democratic Republic of Congo*. MA-dissertation, University of South Africa, Pretoria. <http://hdl.handle.net/10500/20300> [21 November 2018].
- Underwood, PG. 2003. Recognition of prior learning and the development of the library and information service profession in South Africa. *South African Journal of Libraries and Information Science*, 69(1):49–54. <http://0-search.ebscohost.com.oasis.unisa.ac.za/login.aspx?direct=true&db=asn&AN=10714827&site=eds-live&scope=site> [Accessed 1 December 2017].

- United Nations Educational, Scientific and Cultural Organization (UNESCO). 2015. Concepts of *Openness and Open Access*. Module 2. Paris: UNESCO.
<https://wiki.lib.sun.ac.za/images/d/d9/R2.pdf> [Accessed 20 August 2019].
- UNISA. 2008. *UNISA Open Distance Learning Policy*.
[http://www.UNISA.ac.za/static/corporate_web/Content/Colleges/CGS/schools, institutes & research chairs/institutes/documents/odl-policy_version5_16Sept08.pdf](http://www.UNISA.ac.za/static/corporate_web/Content/Colleges/CGS/schools,institutes&researchchairs/institutes/documents/odl-policy_version5_16Sept08.pdf) [Accessed 12 September 2018].
- UNISA. 2016. *Policy on Research Ethics*.
[https://www.UNISA.ac.za/static/corporate_web/Content/Library/Library services/research support/Policy on Research Ethics.pdf](https://www.UNISA.ac.za/static/corporate_web/Content/Library/Libraryservices/researchsupport/PolicyonResearchEthics.pdf) [Accessed 8 February 2018].
- UNISA. Directorate: Instructional Support and Services (DISS). 2018.
[https://www.UNISA.ac.za/sites/corporate/default/About/Service-departments/Tuition-and-Facilitation-of-Learning/Directorate:-Instructional-Support-and-Services-\(DISS\)](https://www.UNISA.ac.za/sites/corporate/default/About/Service-departments/Tuition-and-Facilitation-of-Learning/Directorate:-Instructional-Support-and-Services-(DISS)) [Accessed 7 October 2018].
- UNISA. HEDA: Institutional Information and Analysis Portal. 2018. *Enrolments (to date)*.
<http://heda.unisa.ac.za/indicatordashboard/default.aspx> [Accessed 27 September 2018].
- UNISA. Telecentre Community Outreach. 2018.
<https://www.unisa.ac.za/static/myunisa/Content/Learner%20support%20&%20regions/Regional%20Centres/Gauteng/Documents/Telecenters.pdf> [Accessed 7 October 2018].
- UNISA Library. [n.d]. Encore Unisa.
http://encore.unisa.ac.za/iii/encore/plus/C_S_Orihtresult_U;jsessionid=79DC432AC4B0C3EC778CC3E924A6A24B?lang=eng [Accessed 25 August 2019].
- UNISA Library. 2010. *Annual Report, 2010*. (Unpublished).
- UNISA Library. 2014. E-resources. <https://apps.UNISA.ac.za/UNISA-eresources/frontend> [Accessed 08 July 2019].
- UNISA Library. 2015. *Annual Report, 2015*. (Unpublished).
- UNISA Library. 2016a. *Annual Report, 2016*. (Unpublished).

UNISA Library. 2016b. Libguides.
<http://libguides.UNISA.ac.za/c.php?g=355737&p=2844338> [Accessed 24 November 2016].

UNISA Library. 2017. *Unisa's Partner Public Libraries: Assisting Unisa students*.
<https://libguides.unisa.ac.za/c.php?g=492401&p=3368380> [Accessed 20 August 2019].

UNISA Library. 2018a. Mobile Library (Bus).
[https://www.UNISA.ac.za/sites/corporate/default/Library/Mobile-Library-\(Bus\)](https://www.UNISA.ac.za/sites/corporate/default/Library/Mobile-Library-(Bus))
[Accessed 11 October 2018].

UNISA Library. 2018b. Training.
<http://www.UNISA.ac.za/sites/corporate/default/Library/Library-services/Training>
[Accessed 12 July 2018].

UNISA Library. 2019a. *E-books @ UNISA Library*. <https://libguides.UNISA.ac.za/ebooks>
[Accessed 8 July 2019].

UNISA Library. 2019b. Interlibrary Loan Libguides. <https://libguides.unisa.ac.za/ill>
[Accessed 21 August 2019].

University of Alberta Libraries. 2003. <https://www.ualberta.ca/> [Accessed 5 October 2016].

University of Alberta Libraries. 2015. Interlibrary Loan/Document Delivery.
<https://www.library.ualberta.ca/services/interlibrary-loan> [Accessed 1 November 2018].

University of Alberta Libraries. 2017. <https://www.library.ualberta.ca/ask-us> [Accessed 22 November 2017].

University of Auckland Library. 2018. *Referencing styles used at the University of Auckland*. http://www.cite.auckland.ac.nz/3_1.html [Accessed 22 June 2018].

University of California, Irvine (UCI) Libraries. 2019. <http://airpac.lib.uci.edu/> [Accessed 6 August 2019].

University of Free State. Library and Information Services. 2015. *Inter-Library Library Loan Policy*. http://library.ufs.ac.za/dl/Userfiles/Documents/00000/566_eng.pdf
[Accessed 17 July 2016].

- University of Johannesburg Library. 2019. [https://www.uj.ac.za/library/library-services/Pages/Interlibrary-Loans-\(ILL\).aspx](https://www.uj.ac.za/library/library-services/Pages/Interlibrary-Loans-(ILL).aspx) (26 August 2019).
- University of Nevada, Reno (UNR). [2016]. <https://www.unr.edu> [Accessed 25 October 2016].
- University of Nevada, Reno (UNR). Libraries. [2017]. Interlibrary Loan. <https://library.unr.edu/services/interlibrary-loan> [Accessed 23 August 2019].
- University of Nevada, Reno (UNR). Libraries. 2018. *Workshops*. <https://guides.library.unr.edu/workshops> [Accessed 27 September 2018].
- University of Nevada, Reno. Libraries. 2019. *Scholarly Publishing & Open Access: Open Access*. <https://guides.library.unr.edu/c.php?g=542361&p=3716174> [Accessed 6 August 2019].
- University of Pretoria Library. 2019. Department of Library Services. <http://www.library.up.ac.za/interlending/index.htm> [Accessed 21 August 2019].
- University of South Africa See: UNISA.
- University of Stellenbosch. Library and Information Service. 2017. Interlibrary Loans. <https://library.sun.ac.za/en-za/Usingthelibrary/interloans/Pages/Interlibrary-loans.aspx> [Accessed 20 August 2019].
- University of Texas (UT) Libraries. 2019. Catalog. <https://m-catalog.lib.utexas.edu/> [Accessed 6 August 2019].
- University of Toledo. 2019. <https://www.utoledo.edu/> [Accessed 26 August 2019].
- University of Victoria (UVic). UVic Libraries. 2019. <https://www.uvic.ca/library/> [Accessed 21 August 2019].
- Valentine, B. 1993. Undergraduate research behaviour: using focus groups to generate theory. *Journal of Academic Librarianship*, 19(5):300–304.
- Vogt, W. 2007. *Quantitative Research methods for professionals*. Boston: MA: Pearson Education.
- Wachira, MN. 2013. *Support services for remote users in selected public university libraries in Kenya*. Master's dissertation, University of South Africa, Pretoria.
- Watson, EF & Jagannathan, N. 1997. *Library services to distance learners in the Commonwealth: a reader*. Vancouver: The Commonwealth of Learning.

- Welman, J & Kruger, S. 2001. *Research methodology for the business and administrative sciences*. Oxford: Oxford University Press.
- Wessels, N. 2013. Information literacy and social media in the context of South African Schools. *Mousaion*, 31(3):97–109.
- Wicht, H. 2011. The evolution of e-books and interlibrary loan in academic libraries. *Collaborative Librarianship*, 3(4):205–211.
https://digitalcommons.du.edu/cgi/viewcontent.cgi?referer=https://scholar.google.co.za/scholar?hl=en&as_sdt=0%2C5&q=NetLibrary+and+ebrary+since+1999.+Wicht&btnG=&httpsredir=1&article=1192&context=collaborativelibrarianship [Accessed 25 August 2019].
- Willemse, J. 1995. *The South African Bibliographic and Information Network (Sabinet) as a model for library and information resources sharing*. United Nations Economic and Social Council Economic Commission for Africa. African Regional Symposium on Telematics for Development (United Nations Economic and Social Council, Economic Commission for Africa), Addis Ababa, Ethiopia, 3–7 April 1995.
- Willes, K. 2017. Sampling decisions, in *The SAGE encyclopedia of communication research methods*, edited by M. Allen. Thousand Oaks, CA: SAGE:1545–1546. Inc doi: 10.4135/9781483381411.n542 [Accessed 26 August 2019].
- Williams, S. 2010. New tools for online information literacy instruction. *Reference Librarian*, 51(2):148–162.
- Willis, C. 2012. *Papers of the Gauteng and Rnviron Library Consortium (GAELIC) Inventory*. Library Associations and Related Organisations Archive.
<http://uir.UNISA.ac.za/bitstream/handle/10500/6048/GAELICinventory.pdf?sequence=1> [Accessed 2 April 2017].
- Winter, J, Cotton, D, Gavin, J & Yorke, JD. 2010. Effective e-learning? Multi-tasking, distractions and boundary management by graduate students in an online environment. *Research in Learning Technology*, 18(1).
<https://www.tandfonline.com/doi/full/10.1080/09687761003657598> [Accessed 18 June 2019].

Wiyaka, M & Rukmini, D. 2018. Students' perception of the usefulness of ICT-based language program. *English Language Teaching*, 11(2):53.

<http://www.ccsenet.org/journal/index.php/elt/article/view/72882> [Accessed 12 January 2019].

Wright CR & Reju, SA. 2012. Developing and deploying OERs in Sub-Saharan Africa. *The International Review of Research in Open and Distance Learning*, 13(5):180–220.

https://pdfs.semanticscholar.org/63b1/e501fcab2bbfee91153b0ca954381fb6f217.pdf?_ga=2.263432075.666745572.1564781319-1248753817.1564781319 [Accessed 2 August 2019].

Zendesk. 2019. Customer want to help themselves?.

<https://www.zendesk.com/resources/searching-for-self-service/> [Accessed 18 August 2019].

APPENDICES

Appendix A: Letter of Consent



19 May 2018

Dear Prospective Participant,

You are kindly invited to participate in a survey, conducted by Ms. Sonto Annah Morudu, under the supervision of Dr. Jenny Raubenheimer, a contracted Research Supervisor, and a Co-Supervisor, Dr. Madely Du Preez, a Lecturer in the Department of Information Science at the University of South Africa (Unisa).

The survey is designed to study the relationship between the use of Information Communication Technologies (ICTs) and the document delivery service of an Open Distance Learning institution. You were selected to participate in this survey because you are a Master's student in the College of Education. By completing this survey, you agree that the information you provide may be used for research purposes only, and this includes dissemination through peer-reviewed publications and conference proceedings. Your anonymity is guaranteed at all times.

It is anticipated that the information gained through this survey will contribute to the improvement of the Unisa Library's document delivery and information literacy services, with a view to the understanding students' perceptions regarding the use of ICTs to locate and access library material online, particularly at Master's level. Participants are free to withdraw from the study at any time if they so wish.

There is no apparent risk involved in this study. The survey is designed to be anonymous and this means that the information you provide cannot, and will not, be connected to you personally. This survey is conducted in accordance with the University of South Africa's policy for conducting research that involves the data of Unisa staff and students. It should take approximately 20 minutes to complete the questionnaire.

We do not foresee that you will experience any negative consequences by completing the survey. The researcher(s) undertake to keep any information provided herein confidential. It will not leave our possession, and the final report will be on the findings from the perspective of the participating group, and not from the perspective of any one individual.



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The records are kept for five years for audit purposes, whereafter they will be destroyed. Hard copies will be shredded and electronic versions permanently deleted from the hard drive of the researcher's computer. You will not be reimbursed or receive any incentives for your participation in the survey.

This research was reviewed and approved by the Unisa Ethics Review Committee. The primary researcher, Ms. Sonto Annah Morudu, can be contacted during office hours at 012 4294505. The Study Leader, Dr. Jenny Raubenheimer, can be contacted during office hours at 079 494 84 72 or by email at: raubenheimerjenny@gmail.com. Should you have any questions regarding the ethical aspects of the study, you can contact the Ethics Research Committee Chairperson, Dr. Retha Visagie at: visagrq@unisa.ac.za. Alternatively, you can report any serious unethical behavior at the University's Toll-Free Hotline 0800 86 96 93. However, rest assured that every effort is being made to conduct this survey in a highly ethical manner.

Should you consent to participate in the survey, please click on the link below to begin answering the survey, and thank you once again for your willingness to participate:

<https://www.surveymonkey.com/r/morudu>

The survey will be available until 31 May 2018

Thanking you in advance for your participation.

Yours Faithfully,

Ms Morudu SA

Unisa Library Services

morudsa@unisa.ac.za

Research permission #: 2017_RPSC_075



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Appendix B: Questionnaire

SURVEY QUESTIONNAIRE

TITLE: THE RELATIONSHIP BETWEEN THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTs) AND DOCUMENT DELIVERY SERVICE AT AN OPEN DISTANCE LEARNING INSTITUTION

SECTION A: DEMOGRAPHIC INFORMATION

Please mark the appropriate response with a cross (x) in the space provided.

AQ1: Gender

1	Female	
2	Male	

AQ2: In the past 12 months, have you used the UNISA Library online services (information services that are provided over the Internet)?

1	Yes	
2	No	

AQ3: If your answer is no, why?

.....
.....

AQ4: Have you claimed your myLife email address, joined myUnisa and obtained your myUnisa password?

1	Yes	
2	No	

AQ4: If your answer is no, why:

.....
.....

AQ5: In the past 12 months, in what way did you access the Library's services? You can tick more than one box if you used more than one method of access.

1	By visiting one of the UNISA Libraries in person to access library services and resources online or by using the UNISA Mobile Bus that comes to my area	
2	Telephonically	
3	UNISA Library mobi site (short for <i>mobile website</i>). This term refers Internet sites that have been adapted for easy viewing and interaction on the smaller screen of a mobile device connected to a mobile network or wireless network, e.g. a smartphone or tablet.	
4	UNISA Library Mobile Application (mobile app). This term refers to a software application designed to run on smartphones, tablets and other mobile devices that allows users to access online services quickly and easily.	
5	Email/ SMS/ Fax-to-email/ Fax?	
6	Post Office	
7	Courier Service	

AQ6: Please indicate in which geographical location are you based?

1	Eastern Cape	
2	Free State	
3	Gauteng	
4	Kwa-Zulu Natal	
5	Limpopo	
6	Mpumalanga	
7	North West	
8	Northern Cape	
9	Western Cape	
10	International student	

AQ7: Please indicate below the Master's qualification for which you are registered at UNISA.

1	Master of Education in Adult Education	
2	Master of Education in Comparative Education	
3	Master of Education in Curriculum Studies	
4	Master of Education Management	
5	Master of Education in Environmental Education	
6	Master of Education in Mathematics Education	
7	Master of Education in Natural Science Education	
8	Master of Education in Inclusive Education	
9	Master of Education in Open and Distance Learning	
10	Master of Education in Philosophy of Education	
11	Master of Education in Psychology of Education	
12	Master of Education in Socio-education	
13	Master of Education with specialisation in Adult Education	
14	Master of Education with specialisation in Curriculum Studies	
15	Master of Education with specialisation in Environmental Education	
16	Master of Education with specialisation in Guidance and Counselling	
17	Master of Education with specialisation in Mathematics Education	
18	Natural Science Master of Education with specialisation in Education	

SECTION B: LEVEL OF COMPUTER LITERACY

BQ1: How would you rate your level of computer literacy skills, including personal computer (PC), laptop, tablet, iPad, notebook, etc. (computer literacy is the ability to use computers and related technology efficiently).

None = not able to;

Basic = able to handle only the simplest tasks;

Intermediate = able to handle independently many types of tasks;

Advanced = able to handle independently nearly all types of tasks;

Expert = able to handle independently all types of tasks and serve as a role model or coach for others.

None = 1; Basic = 2; Intermediate = 3; Advanced = 4; Expert = 5

I. Computer literacy skills		None	Basic	Intermediate	Advanced	Expert
		1	2	3	4	5
1	Switching on the computer myself					
2	Switching off the computer myself					
3	Typing skills					
4	Mouse and keyboard skills					
5	How to print documents					
6	How to download/save to flash disk or hard drive documents					
7	How to use a word processing program like Microsoft Office Package (Word, Excel, PowerPoint), Apple e.g. iWork (Text Edit, Keynote, Numbers).					

BQ2: How would you rate your level of competency skills on library digital literacy (digital literacy refers to the ability to use a computer to find, manipulate, identify information competency related to the below statements).

None = 1; Basic = 2; Intermediate = 3; Advanced = 4; Expert = 5

II. Competency on library computer skills			None	Basic	Intermediate	Advanced	Expert
			1	2	3	4	5
1	Knowledge of Internet search engines like Google, Bing, etc.						
2	Know how to search on the UNISA Library Catalogue						
3	Know how to search UNISA Library Catalogue on mobile phone, tablet or other mobile device (via the UNISA Library Catalogue AirPAC) (AirPAC stands for Air Public Access Catalogue)						
4	Know how to search on the Library's subject databases (subscription).						
5	Know when and how to use the UNISA Library e-journal Finder						

II. Competency on library computer skills			None	Basic	Intermediate	Advanced	Expert
			1	2	3	4	5
6	Know how to search for E-Books and how to access the full text						
7	Know how to search within the E- Reference sources (e.g. online encyclopaedias and dictionaries)						
8	I know how to request a literature search on my research topic “literature search is the methodical investigation of all published sources for information bearing on a usually scientific or technological subject” (Merriam Webster 2018)						
9	Know how to make an Interlibrary Loan request						
10	Know how to use the self-issue and self-return RFID (Radio Frequency Identification) service when visiting the Library Branch in person						

II. Competency on library computer skills			None	Basic	Intermediate	Advanced	Expert
			1	2	3	4	5
11	Know how to use Mendeley (Reference Management software) to manage in-text citations and to compile a bibliography for my dissertation/thesis						
12	Know how to use RefWorks (Reference Management software) to manage in-text citations and to compile a bibliography for my dissertation/thesis						
13	Know how to use EndNote (Reference Management software) to manage in-text citations and to compile a bibliography for my dissertation/thesis						
14	Know how to use the Turnitin (Tii) anti-plagiarism software program to check my dissertation/thesis for plagiarism						
15	Know how to use Atlantis (the computer program used in						

II. Competency on library computer skills			None	Basic	Intermediate	Advanced	Expert
			1	2	3	4	5
	qualitative research and qualitative data analysis)						
16	Know how to use SPSS (Statistical Package for the Social Sciences), the Statistics software program to do my own statistical analysis of my research findings						

SECTION C: THE USE OF ICTs

CQ1: How would you rate your level of information literacy skills?

(Information literacy is a set of abilities to recognise when information is needed, i.e. locate, evaluate, and effectively use the needed information).

None = 1; Basic = 2; Intermediate = 3; Advanced = 4; Expert = 5

I. Information literacy skills		None	Basic	Intermediate	Advanced	Expert
		1	2	3	4	5
1	I can log into myUnisa					
2	I know the difference between a full-text database, a partly full text and partly bibliographic database, and a purely bibliographic database					
4	I know how to log into My Library on the Library Catalogue landing page to request/renew books and to check what items are out on my name via my loan record (i.e. books I have borrowed)					
5	I know how to identify relevant databases if I want to download/save/print an online article in one of the UNISA Library's subject databases (subscription)					
6	I know how to identify my information need of a literature search					

I. Information literacy skills		None	Basic	Intermediate	Advanced	Expert
		1	2	3	4	5
7	I know how to identify my information need of a literature book.					
8	I have familiarised myself with the restrictions placed on saving/copying/printing and the ethical use of information as outlined by the copyright law and UNISA's Policy for Copyright Infringement and Plagiarism					
9	I am aware of how to contact my Personal Librarian and what information services the Personal Librarians provide via email or Skype					
10	I know how to request articles online					

CQ2: Please rate the following statements in terms of how you perceive the support role played by the use of ICTs in library research?

Strongly disagree = 1; Disagree = 2; Undecided =3; Agree = 4; Strongly agree = 5

II. Support role of ICTs in library research		Strongly disagree	Disagree	Undecided	Agree	Strongly agree
		1	2	3	4	5
1	The ICTs in use at the UNISA Libraries provide easy access to information					
2	The ICTs allow me to conduct research regardless of my location					
3	The ICTs allow me to conduct research 24/7					

CQ3: Please indicate your agreement or disagreement with the following statements in terms of your perception of ICTs as contributing to the effectiveness of library services.

III. Contribution of ICTs to the effectiveness of the library services		Strongly disagree	Disagree	Undecided	Agree	Strongly agree
		1	2	3	4	5
1	The online book and article request services linked to the Library Catalogue enable rapid delivery of information					
2	I received the material I requested online on time or in good time					
3	The UNISA Library's Internet connectivity and WiFi allows quick access to information					
4	The UNISA Library's printers that are linked to					

III. Contribution of ICTs to the effectiveness of the library services		Strongly disagree	Disagree	Undecided	Agree	Strongly agree
		1	2	3	4	5
	all electronic resources allow an instant printing facility					
5	The Library's scanning facility contributes to an effective delivery service for material available in print					
6	It is easy for me to find required information through the use of the online Library Catalogue					
7	It is easy for me to find required information through the use of the online Library Databases					

SECTION D: LIBRARY ELECTRONIC DOCUMENT DELIVERY

DQ1: How often do you access the Internet from the following locations?

Never = 1; Seldom = 2; Not sure = 3; Sometimes = 4; Very often = 5

I. Means of access to the Internet		Never	Seldom	Not sure	Sometimes	Very often
		1	2	3	4	5
1	Computers available for use at UNISA Branch Libraries					
2	WiFi hotspots in the Muckleneuk library and around Campus (outdoors, e.g. the e-Garden)					
3	My workplace computer					
4	WiFi hotspots in UNISA Library Branches					
5	Computers available for use at public libraries					
6	Computers available for use at community libraries					
7	My home computer including (PC, laptop, tablet, iPad, notebook)					
8	WiFi use available at cybercafés; malls; Tshwane municipality and Telecentres-Community-Outreach					
9	WiFi spot from public school					
10	My smartphone					

DQ2: How often do you download full-text articles from the following UNISA Library databases or e-resources?

Never = 1; Seldom = 2; Not sure = 3; Sometimes = 4; Very often = 5

II. Access to information		Never	Seldom	Not sure	Sometimes	Very often
		1	2	3	4	5
1	ERIC Institute of Education Sciences database: hosted in ERIC: Education Resources Information Center.					
2	ERIC: Education Resource Information Center hosted in (EBSCOhost)					
3	ProQuest: ProQuest Education Collection database					
4	Education Source database hosted in (EBSCOhost) platform					
5	Informit: A Plus Education (Australia) database					
6	Sabinet (SA ePublications) database					
7	Electronic Books (E-Books)					
8	Electronic Journals (E-journals)					
9	Electronic References (E-References)					
10	Electronic Theses & Dissertations					
11	Library Catalogue					
12	Encore Quick and Easy Search (Encore is the Library's federated search engine and searches across a number of selected databases at one time)					

13	UNISA Institutional Repository (Institutional Repository is a digital archive that collects, preserves and publically shares copies of the intellectual output (e.g. dissertations, theses, articles) of an institution (e.g. a university) while still observing copyright law.					
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SECTION E: LIBRARY SKILLS TRAINING

EQ1: Please indicate your agreement or disagreement in relation to your attendance to the following face-to-face training held in the Library (not online) sessions.

III. Library skills training		Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
		1	2	3	4	5
1	Library catalogue					
2	Electronic reserves					
3	Subject database training					
4	Interlibrary Loans					
5	Reference sources					
6	Mendeley (Reference Management Tool)					
7	RefWorks (Reference Management Tool)					
8	Library Guides <i>(LibGuides is a content management system used by Librarians to</i>					

III. Library skills training		Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
		1	2	3	4	5
	<i>curate knowledge, share information, organise class and subject-specific resources and increases the usage of library resources and content and is used to showcase library resources for specific subjects and courses (Springshare 2017)</i>					
9	UNISA Institutional Repository					
10	Turnitin (anti-plagiarism software program)					
11	Encore Quick and Easy Search					

EQ2: Please indicate what library skills training you need, including any training not included in the list in EQ1 above?

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**SECTION F: COMMUNICATION CHANNELS WITH UNISA'S DEPARTMENT OF
LIBRARY SERVICES**

FQ1 Which channel do you use to communicate with the UNISA Library? Please select more than one channel if you use more.

Never = 1; seldom = 2: not sure = 3; sometimes = 4; very often = 5

I. Library communication channels		Never	Seldom	Not sure	Sometimes	Very often
		1	2	3	4	5
1	I use the UNISA Library's Frequently Asked Questions (FAQs) pages before asking questions from the Library					
2	I use my private e-mail to communicate with the Library					
3	I use the myLife e-mail address to communicate with the Library					
4	I use my Facebook account to communicate with the Library					
5	I use my Twitter account to communicate with the Library					
6	I use the Library Enquiries mailbox at library-enquiries@UNISA.ac.za to ask library-related questions and to					

I. Library communication channels		Never	Seldom	Not sure	Sometimes	Very often
		1	2	3	4	5
	communicate with the UNISA Library					
7	I use Pinterest to view the UNISA Library's boards					
8	I use the bib-oplei@UNISA.ac.za mailbox to communicate with UNISA about the availability of UNISA Library training					
9	I use fax-to-email to send my book and article requests to the Library					
10	I use the online "request for books" via the request button linked to Catalogue					
11	I use the myUnisa admin system to track and trace the status of parcels of books and articles posted to me by the Library					

Appendix C: Pre-test questionnaire

PRE-TESTING OF QUESTIONNAIRE-QUESTIONS

31 December 2017

PRE-TESTING OF QUESTIONNAIRE

Ethical clearance reference number: 2017_RPSC_075

PRE-TESTING OF QUESTIONNAIRE

Dear Student\Staff

I am currently registered for the degree of Master's in the subject of Information Science at the University of South Africa, under the supervision of Dr Jenny Raubenheimer and Co-Supervisor: Dr Madely Du Preez. I am conducting a study on the "the relationship between the use of information and communication technologies (ICTs) and document delivery service at an open distance learning institution". I have designed a questionnaire to obtain data from the participants and I intend to conduct a pretest of the questionnaire. To pre-test the questionnaire, it would be much appreciated if you would complete the attached survey form, and the following questions on the content and format of the questionnaire.

Kindly return it to the following e-mail address (morudsa@UNISA.ac.za). Please note that the main purpose of this pretest of this questionnaire is to ensure the validity and reliability of the questionnaire. Your comments would lead to an improvement of the questionnaire.

You are welcome to advise and write comments on the improvement of the questionnaire or to do track changes.

Could you kindly complete them before 10 January 2018?

Thank you in advance.

Kind Regards

Ms. Sonto Morudu

Tel: 012 4294505

E-mail: morudsa@UNISA.ac.za

Please also answer the below questions:

1. How long did it take you to complete the questionnaire? -----
2. Do you have any criticism, comments or suggestions in general about the questionnaire?

Appendix D: Letter from the editor

Appendix D: Letter from the editor

CONFIRMATION OF ROLE OF OVERSEER OF BIBLIOGRAPHY AND LANGUAGE EDITING

This is to confirm that I checked the bibliography for Mrs S A Morudu's dissertation, *The relationship between the use of information and communication technologies (ICT's) and document delivery service at an open distance learning institution*. This study was submitted in fulfilment of the requirements for the degree of Master of Information Science at the University of South Africa in February 2019.

Name: E.M (Lucia) Geyer
Department of Information Science
University of South Africa



Appendix E: Ethical clearance form



DEPARTMENT OF INFORMATION SCIENCE RESEARCH ETHICS REVIEW COMMITTEE

Date: 9 May 2017

Dear SA Morudu,

Decision: Ethics Approval

Ref #:
2017_SAM_37261118_001
Name of applicant: SA Morudu
Student #:X
Staff #:

Name: Title and name of principle applicant, address, e-mail address, and phone number
Ms Sonto Annah Morudu, Unisa Student, monidsa@unisa.ac.za and 012 429 4505

Proposal: The use of ICTs in a Document Delivery Service at a Long Distance Learning Institution.

Qualification: Masters degree in Information Science

Thank you for the application for research ethics clearance by the Department of Information Science Research Ethics Review Committee for the above mentioned research. Final approval is granted for 4 years.

For full approval: The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Department of Information Science Research Ethics Review Committee on 9 May 2017.

The proposed research may now commence with the proviso that:

- 1) The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
- 2) Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Department of Information Science Ethics Review Committee. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.



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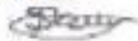
3) *The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.*

Note:

The reference number 2017_SAM_37261118_001 should be clearly indicated on all forms of communication [e.g. Webmail, E-mail messages, letters] with the intended research participants, as well as with the Department of Information Science RERC.

Kind regards,

Signature



Dr Isabel Schellnack-Kelly
Department of Information Science
Research Ethics Review Committee

012 429 6936



University of South Africa
Pretorius Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 facsimile: +27 12 429 4150
www.unisa.ac.za

Appendix F: Library Ethics Letter



Date: 10 October 2014

Re: Intention to Collect Research Data in the Library

Dear Morudu SA

Library Executive Team hereby confirms receipt of your form detailing intention to collect research data in the library. We welcome your research and look forward with keen interest to research into


The Use Of ICTs In A Document Delivery Service at A Distance Learning Institution.

Please contact the manager of the section you are interested in researching on the following details for further arrangements:

Manager's name: Retief Este
Tel: 012 429 3083
Email: retiee@unisa.ac.za

Kindly remember to share the findings of your study with the library by submitting a report to Research Planning & Quality Section not later than a month after compiling your report. Send the report to Ms Nnono Shai at shaigs@unisa.ac.za

Wishing you well in your studies


..... on behalf of Unisa Library
pp Dr M E Maepa
Signature

