



The link between cataloguing and classification curricula and job requirements in South Africa

Philangani Thembinkosi Sibiya

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Supervisor:

M.M Shongwe

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Declaration

I, Philangani Thembinkosi Sibiya, hereby declare that this dissertation, except as otherwise indicated, is my original work. This work has not been and will be not submitted to any other institution for the awarding of any other degree.

Signature..... Date.....

Supervisor

MM Shongwe

Signature..... Date.....

Dedications

I dedicate this work chiefly to God the Almighty. Without his aid this research would have been impossible. I also dedicate this study to my family, specifically my late father, Mr. M Sibiya. I would like to extend my dedication to my mother, Mrs N.N. Sibiya, for the support and love I received throughout my study. This certainly did not go unnoticed and I really appreciate it. *Ngiyabonga Shenge!!*

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Abstract

This study investigated the link between cataloguing and classification curricula and the cataloguing and classification job requirements in South Africa. This is necessary because it is not known whether Library and Information Science (LIS) schools teach what the South Africa LIS job market requires.

In order to determine whether the cataloguing and classification curricula meet the requirements of employers, cataloguing and classification course outlines were requested and received from six LIS schools. Ten cataloguing and classification advertisements for vacant posts were taken from two weekly newspapers (*Sunday Times* and *Mail & Guardian*) and the Library and Information Association of South Africa (LIASA) listserv. A total of 18 professional cataloguers and classifiers from public and academic libraries were involved in the study, which was informed by the interpretive paradigm, while a qualitative research approach was adopted. Qualitative content analysis was used as a research method and for data analysis. A content analysis schedule for the course outlines and professional vacancy advertisements were designed for data collection purposes. An interview schedule was also designed for data collection from professional cataloguers.

The results indicate that cataloguing and classification is offered at the bachelor's degree and postgraduate diploma levels in LIS schools in South Africa, but it is noted that it is also offered at an undergraduate diploma level. No course outlines were provided by LIS schools teaching the courses at diploma level. Cataloguing and classification courses aim to equip students with knowledge on how to organise information in a library environment. The outcomes of these courses are based on the contents offered by LIS schools. In a nutshell, upon completion of these courses students are expected to use both traditional and technocentric methods to organise information materials. Cataloguing and classification contents include AACR2, RDA, DDC, LCC, LCSH, indexing and abstracting and other contents.

Data from professional personnel employment advertisements indicate that an undergraduate diploma, a bachelor's degree or a postgraduate diploma is required for appointment as a cataloguer. At least two years' relevant professional experience is also needed. Cataloguers chiefly require computer skills, communication skills, interpersonal skills, among others. Based on the published knowledge requirement, cataloguers need to have a knowledge of AACR2, RDA and DDC library systems, for example Millennium software or SLIMS.

Among the duties of a cataloguer the most dominant requirement was the ability to catalogue and classify library materials using cataloguing tools.

Cataloguers stated the need in their professions for knowledge and skills similar to those stated in the employment vacancy advertisements. They emphasised the knowledge of RDA as it is a priority requirement in both academic and public libraries. **(For a list of the abbreviations used in this dissertation, please refer to p. xii)**

The results obtained from cataloguers revealed that the best attitudes for a cataloguer are love for the job, being a lifelong learner, with honesty and integrity, and many others as detailed in Chapter 5. Cataloguers believe that the curricula offered by LIS schools based on these courses are not sufficient, more especially in the bachelor's degree in LIS. Their concern is mostly based on the amount of practical tuition and experience included in these courses: cataloguers mentioned that the time provided is limited.

The study therefore concludes that the curricula offered by LIS schools are in line with what employers are looking for.

The study recommends that LIS schools build strong links/relationships with libraries to improve their cataloguing and classification curricula. Employers of cataloguers are advised to provide continuous training to their employees so that they remain relevant in their professional field. Cataloguers and classifiers themselves must be lifelong learners in order to remain relevant in their field since it is dynamic.

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Abbreviations

AACR	: Anglo-American Cataloguing Rules
AC	: Advanced Cataloguing
AVS	: Audio Visuals
B.BIBL	: Baccalaureus Bibliothecologiae
BLIS	: Bachelor's In Library And Information Science
BTECH	: Bachelor Of Technology
CD-ROMS	: Compact Disk - Read Only Memory
DDC	: Dewey Decimal Classification
DUT	: Durban University Of Technology
FRBR	: Functional Requirement For Bibliographic Records
HOD	: Head of Department
ICT	: Information Communication Technology
ILS	: Information Library Systems
ISBD	: International Standards For Bibliographic Description
IT	: Information Technology
KOS	: Knowledge Organisation Systems
LCC	: Library Of Congress Classification
LCSH	: Library Of Congress Subject Headings
LIASA	: Library and Information Association of South Africa
LIS	: Library and Information Science
MARC21	: Machine Readable Cataloguing
MLIS	: Masters in Library And Information Science
OCLC	: Online Computer Library Centre
OPAC	: Online Public Access Catalogue
RDA	: Resource Description And Access

SABINET	: Southern African Bibliographic Information Network
SACAT	: South African Catalogue
SAILIS	: South African Institute For Librarianship And Information Science
SALA	: South African Library Association
UCT	: University of Cape Town
UDC	: Universal Decimal Classification
UKZN	: University of Kwazulu-Natal
UL	: University of Limpopo
UNISA	: University of South Africa
UNIZULU	: University of Zululand
URICA	: Universal Real Time Information Control Administration
USMARC	: United States Machine Readable Cataloguing
UWC	: University of the Western Cape

CHAPTER 1: INTRODUCTION AND BACKGROUND

1.1. Introduction and Background

Education and training of cataloguers contributes a crucial part of the education and training of librarians (Cloete, 2005: 54 & Boer, Coetzee & Coetzee, 2001). There is consensus that among courses that should be offered in the Library and Information Science (LIS) curriculum, cataloguing and classification is still considered to be a core subject which is relevant in the South African LIS profession (Shongwe & Ocholla, 2013:236 & Gorman, 2002). Recent studies have indicated a rapid change in the LIS job market in South Africa (Ocholla & Shongwe, 2013:227). This rapid change has been observed also by Curry (as cited in Edegbo, 2011:4), noting that LIS academic departments have not only experienced rapid changes in the market globally, but also the consequent extension of competition beyond traditional, institutional, national and regional boundaries. This environment has made it essential for LIS schools to improve their curricula in line with the job market requirements. Further, Raju (2016:6) and Shongwe (2014) indicate that Information Technology (IT) skills have taken over library activities. This means that LIS schools should consider offering programmes that contain IT components. Raju (2016) further pointed out that in the developing world there are challenges encountered in the adoption of IT; however, the digital age has been embraced, through preservation, organisation, electronic acquisition, scholarly communication of digital resources and services.

According to Taniguchi (2005:124), cataloguing and classification education in LIS schools must display the current situation of cataloguing and classification practices in libraries, in particular the use of standards and tools, for instance cataloguing rules. However, in South Africa this seems not to be the case. Ocholla and Ocholla (2014:5), for example, argued that cataloguers are not sufficiently trained for the position in most LIS schools in South Africa. Ocholla and Ocholla (2014:5) are of the view that one semester in each of these courses is not enough for students to grasp the skills and knowledge required for competent cataloguers. Raju (2014:163) also points out that the Information Communication Technologies (ICTs) in South Africa specifically have resulted in various changes in the LIS profession. These changes are mainly brought about by the change of the format of information and how it is accessed (Raju, 2014). Raju (2014:163) further mentions that the job environment based on the LIS profession requires that candidates have metadata knowledge and understanding and

experience of digital content creation, which are mainly part of cataloguing and classification in the twenty-first century. Hsieh-Yee (2008:103) suggests that cataloguing and classification education should be offered in a multi-faceted manner that includes ICT components and other discipline-related contents that will enable cataloguers to function effectively in their cataloguing roles. Hsieh-Yee (2008:103) cogently points out that the profession has become a digitally operated world; therefore, people trained to be cataloguers should acquire ICT skills and knowledge for efficient and effective participation in the job environment.

This study analysed the cataloguing and classification curricula in LIS schools to establish whether it is in line with the demands of the cataloguing and classification profession in South Africa.

1.1.1. Conceptual setting

The concepts of cataloguing and classification have similar meanings to a variety of other concepts. McIntosh (1997:135) defines cataloguing as “the technical process of describing a work bibliographically and assigning a call number. It includes determining the main entry, describing the item, and assigning added entries, subject entries, and a call number”. Boer, Coetzee and Coetzee (2001) state that cataloguing in its widest sense combines describing, indexing, classifying and controlling library resources bibliographically, and it is considered part of technical services. McIntosh (1997) views classification as the technical process of allocating a class number to an item that shows its subject and indicates its location in the collection by using bibliographic tools or standards. Boer, Coetzee and Coetzee (2001) alternatively define classification as the ordering of related phenomena into categories, groups, families, or systems according to characteristics or attributes.

The job market is the availability of employment and labour, which can be termed supply and demand (Partridge & Yates, 2012). During this study, the term "LIS job market" was used frequently. Ocholla and Shongwe (2013:230) define the LIS job market in South Africa in terms of five broad professional categories: librarians, knowledge managers, information professionals, LIS academics and records managers and archivists.

Studies have indicated that LIS education should have cataloguing and classification components to meet the demands of the employers, which in most cases are libraries and information centres (Ocholla & Shongwe, 2013; Ocholla, Ocholla, Olson & Glover 2012; Gorman, 2002). A number of studies have been conducted in South Africa based on the cataloguing and classification curricula. These studies include Boer, Coetzee and Coetzee

(2001), Cloete (2005), Ocholla and Ocholla (2014) and Ocholla, Ocholla, Olson and Glover (2015). However, this is not an exhaustive list of studies done pertaining to this issue. Cloete (2005) investigated the education and training of cataloguing and classification students in South Africa through distance learning. Subsequently, Ocholla and Ocholla (2014) and Ocholla *et al.* (2015) undertook another study comparing South African cataloguing and classification education to that of the United States of America (USA) and of Brazil. Apparently all these studies investigating the cataloguing and classification curricula did not focus on the link between the curriculum and the LIS job market. Ocholla and Ocholla (2014) assessed the causes that have led to the scarcity of cataloguers through checking the curricula and methods used to teach cataloguing and classification in South Africa.

Cloete (2005:54) argues that even though the automation of library functions has changed the nature of work in cataloguing sections through the introduction of copy cataloguing, expert human effort is still required for bibliographic work since it can never be completely computerised. Cloete (2005) states this specifically based on authority and quality control. Though copy cataloguing is one of the most important parts of the LIS profession and is perceived as an easy task for the cataloguer, the person doing the job should be the one with a knowledge of cataloguing and classification principles. Cloete (2005:55) further notes that cataloguing and classification education is usually conducted by means of contact education, or a face-to-face model (Ocholla *et al.*, 2015).

Partridge and Yates (2012:81) state that developing a dynamic curriculum that accommodates the demands of an increasingly broad and diverse employment landscape, is required. They further remark that this change will help meet the current and future requirements for the profession. In addition, they state that developing such a curriculum will also help produce a diverse number of graduates with the required characteristics for information functions in the rapidly changing twenty-first century. However, this can be achieved through proper teaching of cataloguing and classification to organise information appropriately, as noted by Gorman (2002). Shongwe and Ocholla (2013) performed a tracer study of Department of Information Studies (DIS) graduates from the University of Zululand, which revealed that cataloguing and classification skills are required in the LIS job market and suggests that all LIS students must learn it at university. Those results led to the introduction of the information retrieval course for Information Science students in the LIS department at the University of Zululand. Cloete (2005:58) provides a limited list of the requirements of the cataloguer, but they are too briefly

stated since her study was not meant to address such objectives. However, the studies mentioned above were not specifically considering the cataloguing and classification curricula in relation to cataloguers' job descriptions and requirements in the job market. Gorman (2002:4) declares that most LIS schools in the USA refuse to teach cataloguing and classification, yet these two subjects are still regarded as the core competencies of librarianship. In South Africa, Ocholla and Ocholla (2014) have perceived the same trend, with former LIS schools not offering these subjects. The literature reveals some gaps in the study of cataloguing and classification in LIS schools in South Africa. A notable gap is the lack of studies investigating the link between cataloguing and classification curricula and the LIS job market requirements for cataloguers. This study was conducted to close the gap in the literature by investigating the link between cataloguing and classification curricula and the job market. Chapter 2 presents a detailed literature review.

1.1.2. Contextual setting

The study focused on South African LIS schools that teach cataloguing and classification in terms of the South African LIS job market for cataloguers. Ocholla and Bothma (2007) found that LIS schools are located in the Humanities or Social Sciences faculties in many South African universities. There has been a reduction in the number of LIS schools in South Africa, from eighteen to twelve (Ocholla & Bothma, 2007:150). However, more recently Raju (2014:164) has pointed out that there are ten LIS schools that offer LIS education in response to the job market requirements. Ocholla and Ocholla (2014:2) have observed that there are only eight LIS schools that teach cataloguing and classification in South Africa. They are the University of Cape Town (UCT), University of the Western Cape (UWC), University of Limpopo (UL), University of KwaZulu-Natal (UKZN), University of South Africa (UNISA), University of Fort Hare (UFH), Durban University of Technology (DUT), Walter Sisulu University and the University of Zululand (UZ). Ocholla and Ocholla (2014) also state that other universities in South Africa which used to teach cataloguing and classification are no longer teaching the subject since they no longer consider themselves to be LIS schools. These universities include the University of Johannesburg and the University of Pretoria. Gorman (2002:3) has noted that due to the introduction of Information Science in the field of librarianship, most schools have abandoned core areas of the profession such as cataloguing and classification. Ocholla *et al.* (2015:22) have supported this claim and stated that these schools call themselves iSchools and they believe that the subject cataloguing and classification is irrelevant. However, Ocholla *et al.* (2015) believe that in the future,

cataloguing will have to be taught in these so-called iSchools since the job market still needs these courses. These schools consider themselves to be information and knowledge oriented rather than directed at LIS. Though there may be changes in LIS education, cataloguing and classification is still considered a core subject and is at the heart of technical services in information centres worldwide (Gorman, 2002).

This study also targeted the LIS job market in South Africa. Specifically, the study targeted academic and public library cataloguers as well as employers of cataloguers. Boer, Coetzee and Coetzee (2001:224) point out that it is important when designing a curriculum seriously to consider the requirements of the profession or job market. The LIS job market in South Africa has been surveyed by Ocholla and Shongwe (2013) over a period of four years (2009-2012). They also traced University of Zululand (UZ) LIS graduates over a period of ten years (2000-2009) in the workplace, and found that cataloguing and classification is still required in the South Africa LIS job market, specifically the KwaZulu-Natal academic and public libraries.

1.2. Statement of the problem

It has been noted that the introduction of the Information Science degree in the LIS field and the adoption of IT has resulted in the reduction of LIS schools in South Africa, adversely affecting the teaching of cataloguing and classification in LIS schools (Gorman 2004: 11; Ocholla & Ocholla, 2014; Cloete, 2005:54). Contributing to this, Gorman (2004) argues that the increasing dominance of electronic media has resulted in the disappearance or change of traditional cataloguing and classification, leading to the scarcity of cataloguers. Ocholla and Ocholla (2014) have observed that in some instances the course is offered more theoretically than practically. On the other hand, Shongwe and Ocholla (2013) have noted that cataloguing and classification is still needed in the LIS job market in South Africa. As the literature gap has been identified, it is not certain whether LIS schools in fact teach what the South African LIS job market requires. The current researcher therefore believes that, for effective teaching and learning of cataloguing and classification in South African LIS schools, there should be a link between what is taught and what is required by employers.

1.3. The aim of the study

The aim of this study was to investigate whether there is a correspondence between the cataloguing and classification curriculum and what the cataloguers' job market requires.

1.4. Objectives

The specific objectives of the study were:

- 1.4.1.** To analyse the cataloguing and classification curricula in LIS schools in South Africa, in order to explore which LIS qualifications offer cataloguing and classification courses.
- 1.4.2.** To determine cataloguing and classification job requirements and functions in South Africa.
- 1.4.3.** To investigate whether the cataloguing and classification curricula offered by LIS schools meet the professional requirements.

1.5. Research questions

The following research questions were answered in the study:

- 1.5.1.** What is taught in the cataloguing and classification courses in LIS schools in South Africa?
- 1.5.2.** Which degrees offer cataloguing and classification courses?
- 1.5.3.** What are the job functions and requirements for cataloguers?
- 1.5.4.** Do the cataloguing and classification curricula offered by LIS schools meet the expectations of the employers?

1.6. Contribution to the body of knowledge

This study contributes to both theory and practice. In practice, the study informs LIS professionals and LIS schools about the current status of LIS curricula and the job market. This will enable them to make informed decisions. For example, LIS schools will discover whether what they are teaching is relevant and what changes if any to the curriculum must be made. LIS professionals will decide whether further training for cataloguers is needed, and

LIS employers will also make informed decisions when hiring cataloguers. In theory, the study has added to the existing body of knowledge on the cataloguing and classification curricula in terms of the LIS job market.

1.7. Research methodology: overview

Regarding philosophical perspectives, specifically the ontological position, this study has used relativism. Epistemologically, interpretivism was used. Inductive research methods were employed to achieve the purpose of the study, which used a qualitative research approach and qualitative content analysis as methods. The study targeted LIS schools teaching cataloguing and classification in South Africa, cataloguing vacancy advertisements for a certain period, and cataloguers working in public and academic libraries. The study used purposive sampling methods in sampling LIS schools and purposive sampling in selecting job advertisements and cataloguers. This research involved analysing the cataloguing and classification course outlines from six LIS schools teaching these courses in South Africa. Ten cataloguing job advertisements were gleaned from the LIASA listserv and two national newspapers, namely *Sunday Times* and *Mail & Guardian*; these advertisements were analysed to establish the job requirements and functions of the cataloguers. Then, interviews were conducted with cataloguers from two academic libraries based in KwaZulu-Natal (KZN) and two cataloguing centres for public libraries located in KZN. The study mainly targeted cataloguers, employers of cataloguers and LIS schools teaching cataloguing and classification (see Chapter 3).

1.7.1. Results: overview

The study established that LIS schools still teach cataloguing and classification; courses are offered at the bachelor's and postgraduate diploma levels in LIS. The contents offered by LIS schools are sufficient since they include both traditional and ICT based contents for cataloguing and classification. The cataloguing course outlines also show that the new cataloguing standard known as RDA is taught by all LIS schools that teach cataloguing and classification. This implies that LIS schools have updated their contents based on cataloguing and classification. Course outlines from LIS schools also indicated that they offer some practical classes. Although most of them did not indicate the duration of the practicals, it is believed they are offered according to the national curriculum framework.

Based on the data from job advertisements on the requirements for the post of cataloguer, it is clear that at least an undergraduate diploma, bachelor's degree or postgraduate diploma is

required. The results of the study and the literature showed that traditional cataloguing standards are still a requirement in the job environment. These tools and standards include AACR2, RDA, DDC, LCSH, indexing and abstracting. Although the literature from other countries has emphasised that knowledge concerning the organisation of information from the work (digital curatorship) is a common requirement, only one advertisement in this study required it. Across all job advertisements, RDA was a common requirement, and LIS schools teach this new cataloguing standard. A common duty for cataloguers is cataloguing and classifying library materials for easy retrieval purposes.

Based on the data obtained from cataloguers, the study revealed that cataloguers are not satisfied with the contents offered for cataloguing; they claim that these contents are sufficient but outdated. Cataloguers also complained that the practical work (class practical and fieldwork) is not sufficient, as students, when they are newly recruited from LIS schools, are unable to catalogue materials. When looking at data from cataloguers, the researcher concludes that the time provided for cataloguing in LIS schools is inadequate, especially within a bachelor's degree in LIS. The study proposes, based on the data from cataloguers, that there must be an extension of the time allocated for teaching cataloguing and classification in this (bachelor's) qualification.

1.8. Ethical considerations

The UZ provides guidelines and policy documents that show what ethical considerations the researcher should adhere to. These documents require that the researcher should avoid plagiarising and harming participants and non-participants whether physically or emotionally. For this research, participants were respected in terms of confidentiality. The researcher ensured that a proper letter from the University was submitted to people who were interviewed. I declare that every guideline listed in the school's ethical guidelines and policies was followed, thus producing this research, which is free of plagiarism and conflict. All used document or materials were appropriately cited and acknowledged correctly. Please refer to Appendix I for the ethical clearance certificate.

1.9. Resources

The resources provided by UNIZULU were adequate for this research to be completed. However, travelling expenses were required by the researcher to reach relevant libraries to

collect data through interviewing cataloguers or heads of cataloguing sections. The UNIZULU research office funded all the activities that took place concerning this research. Therefore, this research had all the required resources for its completion.

1.10. Intellectual property

This work will be covered by copyright law; nobody will be allowed to duplicate or reproduce this work without the consent or permission of the researcher. All possible infringements will be reported to the relevant authorities.

1.11. Knowledge dissemination

It is anticipated that the study's findings will be disseminated in peer-refereed scholarly journals. The *South African Journal of Libraries and Information Sciences (SAJLIS)* will be targeted to publish the research findings. Preliminary findings have already been presented at the annual Information Studies (IS) conference in 2016.

1.12. Chapters of the study

This research publication consists of seven chapters.

- Chapter 1: Introduction and a comprehensive background for this research based on conceptual and contextual settings. A statement of the problem, the aims, objectives and contribution to the discipline of the study, and other introductory factors.
- Chapter 2: A literature review of the study.
- Chapter 3: The methodology of the study, which includes the paradigms, research approach, research methodology, research method, sampling, data collection, and data analysis.
- Chapter 4: The findings of the study. It specifically presents the data analysis and interpretations. Findings on the course outlines and job advertisements are given.
- Chapter 5: Data presentation, interpretations and analysis of the data from interviews with cataloguers.
- Chapter 6: Discussion of findings
- Chapter 7: Summary, conclusion and recommendations.

1.13. Summary

This chapter commenced by presenting the introduction and background of the study, followed by the statement of the problem. In addition, the aim and objectives to be achieved by the researcher were given. The chapter proceeded by providing research design, ethical considerations, intellectual property and how knowledge obtained from the study would be disseminated. The next chapter provides a detailed indication of literature focused on cataloguing and classification education as compared to the job requirements of cataloguers.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

This chapter examines literature on the relation between cataloguing and classification curricula and job requirements in South Africa. A literature review is defined as the comprehensive study and interpretation of literature relating to a particular topic under investigation (Welsh & Batley, 2012). A literature review is perceived by Ridley (2012) as an extensive reading for the related research and theory concerning one's area of interest. The literature review connects the ideas of the researcher with other researchers' ideas. This literature review will present studies that have been conducted in the area of cataloguing and classification teaching and learning.

The structure of the literature review is as follows: it begins with a theoretical discussion of the role played by scholarly pioneers in transforming the field of cataloguing and classification over time. It proceeds to an overview of the development of LIS education in South Africa, and then surveys cataloguing and classification education and training in a global and a South African context. It discusses the levels at which cataloguing and classification courses are taught. Further, the importance of cataloguing and classification is indicated. The curricula and the models used to teach the course are also included in this chapter, which concludes by stating the job requirements for cataloguers and the LIS job market concerning cataloguing librarians.

2.2. Cataloguing and classification

Yasuf (2015:40) defines cataloguing as the description of information materials, whether monographs, series publications or other non-book materials providing important bibliographic elements such as the material's author, title, publisher, place of publication and others block areas. Chaudhary (2011:65) approaches the definition of cataloguing by first defining the library catalogue as a list of library items embedded in the library's collection or in the group of libraries arranged in a particular plan. Chaudhary (2011:65) defines cataloguing as the process of preparing that list. Both Chaudhary (2011:65) and Yasuf (2015:40) agree that the cataloguing process involves the identification of certain important bibliographic descriptions, known as access points, to facilitate information retrieval.

Yusuf (2015:40) defines classification as the categorisation of information materials or sources according to their likeness or separated based on their differences, thereby assigning class numbers, letters of the alphabet or alphanumeric labels to the library item. Classification is a part of cataloguing that is concerned with assigning the categories of the items based on their subjects considering the relationships and differences among subjects. Chaudhary (2011) states that there are tools used for classifying library materials. These include the Dewey Decimal Classification (DDC), Library of Congress Classification (LCC) and Universal Decimal Classification (UDC) widely used in Europe.

Cataloguing and classification has been in existence for centuries. It can be traced back to a time when collections were listed on scrolls and tablets; however it was very active when print arrived. In order to understand cataloguing and classification, the contributions of scholarly pioneers like Sir Anthonio Genesio Maria Pannizi, Siyali Ramamrita Ranganathan, Charles Ammi Cutter, Seymour Lubetzky and Melvil Dewey need to be highlighted. These scholars successfully undertook the daunting task of cataloguing and classification over the past centuries.

Miller (1967) narrates Sir Anthonio Pannizi's journey as a librarian and the pioneer in cataloguing and classification in his book *Prince of Librarians: Life and Times of Antonio Panizzi of the British Museum*. Miller (1967) mentions Pannizi as the outstanding leader in librarianship during the 19th century. Pannizi received his Ph.D. in law in 1818. However, due to some conflict concerning his involvement in the revolution which was to free Italy from Austrian control, he had to escape for his safety from his country of birth and found refuge in England. Denton (2007) states that Pannizi was hired at the British Museum, where he began the process of cataloguing. Pannizi came up with a book containing 91 rules, titled *Rules for the Compilation of the Catalogue*. In this book, Pannizi suggested that books be recorded using the author and the title in order to be easily retrieved by users. Pannizi put the user first when he was creating cataloguing rules. Denton (2007) points out that Sir Pannizi's role was great in the period 1856-1866, but even in modern cataloguing, Pannizi's rules are still a wellspring. His rules were subjected to scrutiny, debate and intense justification, but they were approved by a government body and used by a major library. These rules received international attention. They were good rules which led to the best international catalogue since they were compiled by a great librarian of the period.

Welsh and Batley (2012:5) list Siyali R. Ranganathan's five laws as forming the basic principles of librarianship. They are related to cataloguing which mainly renders items findable ("Books are for use and every reader his book") quickly and efficiently ("save time of the reader and a library is a growing organism"). They further state that Ranganathan is a good place to start thinking about general cataloguing principles, because he places users at the centre of the library and that is important when one is cataloguing. Welsh and Batley (2012:3) are of the opinion that a well-prepared catalogue may be a beautiful entity to trained eyes, but the real measure of its worth should be those searching it, based on how effective it is in locating information sources.

Furst (2009:3) narrates the contribution of Charles Ammi Cutter who played a major role in the development of libraries based on cataloguing and classification during the 19th century. Cutter was the founding member of the American Library Association. Furst (2009:2) mentions that Cutter came up with the objectives of library cataloguing which include the following:

- I. To enable a person to find a book when either the author or the title or subject is known.
- II. To show what the library has by a given author, on a given subject and in a given literature.
- III. To assist in the choice of a book as to its edition and its character.

Garner and Pierce (2015:3) state that these three objectives or entry points were used in card catalogue and dictionary catalogue volumes during those centuries and have continued to be used even in the modern or computer era. These entry points nowadays are considered as main fields which can be used to search for full text documents or locations from the catalogue or databases.

Welsh and Batley (2012:5) state that in recent years Cutter's objectives are reflected in the user task set out by the Functional Requirement for Bibliographic Records (FRBR) which is the basis of the Resource Description and Access (RDA), the new cataloguing standard.

The other person behind the evolution of cataloguing and classification is Seymour Lubetzky, an active librarian in the 20th century (Welsh & Batley 2012:4). Lubetzky worked in the Library of Congress for many years; his influence was great in the library environment,

specifically for his role in cataloguing and classification (Denton, 2007:39). Welsh and Batley (2012:4) list his publications on cataloguing, which include:

- *Cataloguing Rules and Principles: A Critique of the A.L.A. Rules for Entry and a Proposed Design for Their Revision;*
- *Prepared for the Board on Cataloguing Policy and Research of the A.L.A. Division of Cataloguing and Classification,*
- *Principles of Cataloguing: Final Report and Code of Cataloguing Rules*
- *Author and Title Entry. An Unfinished Draft for a New Edition of Cataloguing Rules.*

These books have greatly influenced today's cataloguing and librarianship at large.

Denton (2007), states that Lubetzky became popular due to his approach to cataloguing code design. These codes are still relevant today in cataloguing, though cataloguing principles have been revisited and revised for the virtual space. Denton (2007) further remarks that Lubetzky came up with cataloguing codes in his book which were eventually discussed at the Library of Congress Bicentennial Conference on Bibliographic Control in the New Millennium and were popularly used by the United States, Canadian and United Kingdom libraries for cataloguing practices in the 20th century. In 1967 these codes were recorded in the AACR. Lubetzky (1953:67) once said, "An adequate catalogue, concerned about the actual needs of a reader, must be designed to tell one not only whether the particular book he or she seeks is in the library, but also what other editions of the work and what other works of the author the library has." This implies that he is the one who articulated the rule of listing all editions of books in the current publication for tracing purposes.

The origins of DDC should be told in this study, as it is used for the teaching and practice of classification in LIS schools and libraries in South Africa. Behind the origins of DDC is Melvil Dewey, who created this classification scheme. Prescott (2001:50) defines Melvil Dewey as the father of modern librarianship due to his classification schemes. Prescott (2001:52) states that Dewey was an intense, outspoken, organised, irrepressible and noticeably eccentric man. Prescott (2001:52) mentions that Dewey created the DDC classification when he was studying at Amherst College in the USA. Prescott (2001:52) states that Dewey would spend many hours studying in the library until he realised that the library collection was not arranged properly. Dewey started to visit the nearest libraries and chatted with other librarians concerning the methods used for classification in their libraries. He

would read about future methods of classification, but they were not fascinating to him until one day he realised he should use decimal numbers to classify the collection. Ultimately, he requested the Amherst College to reclassify their collection. That is when his classification methods began. Niculescu (2008) states that in 1876 the first edition of DDC, *A Classification and Subject Index for Cataloguing and Arranging the Books and Pamphlets of a Library*, appeared. DDC editions have been revised for many years and are still used in the librarianship profession to ensure hospitability and accommodation as new areas of knowledge emerge.

These scholarly pioneers created a solid foundation for modern day librarianship, especially cataloguing and classification. Their work has had a great influence on today's cataloguing and classification.

2.3. Early development of library and information science education in South Africa

In order to understand current trends, challenges and the development of LIS education at present, it is vital to look back at the historical development of LIS education in this country. LIS education in South Africa began in 1933 when the LIS professional body known as the South African Library Association (SALA) introduced the training of librarians (Musiker as cited in Raju (2005:74). Raju (2005) mentions that LIS education was introduced as a response to recommendations made by the Carnegie Corporation commissioners in South Africa, Pitt and M.J. Ferguson. Bothma & Ocholla (2011) are of the view that the development of LIS education was shaped by the quantitative growth of LIS schools from the year 1938 to the year 2000, increasing from one school to 18. A dramatic decline from 18 to 12 schools in 1998 was another noticeable period. According to Raju (2005:75), the University of Pretoria was the first university to offer a degree in librarianship, in the year 1938. The University of Cape Town followed a year later. During the introduction of LIS education, the University of South Africa joined the other two universities and offered a correspondence programme in librarianship from the year 1955. Other universities followed.

Raju (2005:77) states that in 1979 the SALA's committee for education and research developed standards for library and information services which were used to guide curriculum development. This implies that the services offered by information centres were the main focus of the curriculum in order to meet the demands of the information society. In

1987, the South African Institute for Librarianship and Information Science (SAILIS) felt that the education for LIS should be advanced for both paraprofessionals and professionals. Based on the guidelines developed by SAILIS, it was clear that LIS professional education should be offered by universities to ensure quality education through proper monitoring.

Onyancha and Mnishi-Majanja (2009:109) note that some LIS schools have dropped the term 'library' and use 'information' instead. This implies that the name of the department has to do with the specialisation of the LIS schools. Ocholla and Ocholla (2014:2) concur with the two authors that these schools changed their names to Information Science and that their specialisation is no longer librarianship; rather it is information and knowledge driven. This has resulted in such schools abandoning cataloguing and classification education (Onyancha & Mnishi Majanja, 2009:109).

Many authors (Gorman, 2002; Davis, 2008; Ocholla & Ocholla, 2014; Ocholla *et al.* 2015; Yusuf, 2015) have shown that cataloguing and classification is the core of LIS education. Therefore, they are of the view that there is no library school that should not teach cataloguing and classification. Nevertheless, some of the schools have stopped teaching the courses due to their areas of specialisation. In South Africa, schools that still teach core librarianship teach the course. However, Shongwe and Ocholla (2013:9) have found that cataloguing and classification should be taught to anyone who is trained to be an information specialist; hence, it is required for information organisation at any information centre. This implies that not only aspiring librarians should be taught cataloguing and classification, but also everyone who is trained to work with information.

2.4. Cataloguing and classification education and training: global and South African contexts

Many studies have discussed issues, trends and the future of cataloguing and classification education around the world. Current studies have indicated that due to the automation of the library system, the LIS curriculum has changed or is in transition (Cloete, 2005; Bowman, 2009; Cerbo, 2011; Yusuf, 2015; Ocholla *et al.* 2015; Ocholla & Ocholla, 2014). This change has been brought about by the introduction of complex technologies in the LIS profession which has affected LIS education (Shongwe, 2014). Partridge and Yates (2012:20) state that developing dynamic curricula that accommodate the demands of an increasingly broad and diverse employment landscape is required. Therefore, the LIS curricula have changed

dramatically from the traditional teaching of cataloguing and classification to the more technocentric manner of teaching the courses all over the world. This technocentric curriculum is considered to be in line with the job market (Partridge & Yates, 2012:20).

At some universities in developed countries, cataloguing and classification is offered to both undergraduate and postgraduate students as an elective course. For example, in the USA and United Kingdom (UK), Bowman (2009), Davis (2008) and Hsieh-Yee (2008) suggest that the traditional catalogue, while trusted by users, is not a first choice in finding information and is no longer cost-effective. This may be the reason for offering the course as an elective. Although it is offered as an elective, Gorman (2002) argues that librarians in the making should study cataloguing and classification as compulsory courses, hence the basis of the profession is cataloguing and classification. Gorman (2002:2) further mentions that “if one cannot think like a cataloguer they cannot think like a librarian and therefore cannot deliver effective library services.” Yusuf (2015:41) agrees with Gorman by stating that for efficient, adequate and effective cataloguing and classification services, future librarians must be trained adequately in order to maintain and update the profession and keep it running forever as these courses are the basic competencies and core areas of the profession. Contributing to this debate, Bowman (2009:313) states that even though cataloguing and classification is offered as an elective, theories and principles grounded in cataloguing and classification have to be linked with the new technology for effective organisation and retrieval of information, for which they are important.

While other countries still take cataloguing seriously, in the UK some institutions have virtually abandoned cataloguing and classification. They normally do not teach formal cataloguing, but teach some components of the course as an elective (Bowman, 2009:311). Those schools call cataloguing and classification “knowledge organisation or recording & retrieval”. Although they are providing cataloguing and classification as an elective, they still consider cataloguing and classification skills to be relevant in the work environment. This is witnessed by Bowman (2009:318) who mentions that in most LIS schools in the UK, cataloguing and classification courses are not called by their traditional name (cataloguing and classification) because students perceive them as boring, difficult and depressive. Rather, fancy names like information handling, knowledge organisation, and organisation of bibliographic data, etc. make the course seem more interesting using its traditional cataloguing and classification name. This is to ensure that information specialists take

cataloguing and classification courses in order for them to leave LIS schools with a basic understanding of cataloguing and classification and possessing these basic skills.

Cataloguing and classification has been an area of interest among academics in South Africa, and researchers such as Mutula and Tsvakai (2002), Cloete, Snyman and Cronje (2003), Cloete (2005), Ocholla and Ocholla (2014) and Ocholla *et al.* (2015) have all shown a keen interest in the subject. Mutula and Tsvakai (2002) looked at the historical perspective of cataloguing and classification in Africa and found that most institutions in Africa are using Western cataloguing and classification tools, which have a lack of hospitality and accommodation for African (including South African) information material. Mutula and Tsvakai (2002) suggested that cataloguing tools that will ensure hospitability and accommodation for African materials should be developed. Cloete, Snyman and Cronje (2003) evaluated the use of a mix of media and technology methods to teach cataloguing and classification and found that both technology and traditional methods of teaching cataloguing and classification are effective; therefore they should be integrated.

Cloete (2005) investigated the education and training of cataloguing students in South Africa through distance learning. It was discovered that distance education was effective for students through the use of the Internet; however, some students were not used to technology. Ocholla and Ocholla (2014) assessed the curriculum for LIS schools teaching cataloguing and classification and found that the teaching of cataloguing and classification is still necessary and that this education is similar across all LIS schools in South Africa. Ocholla *et al.* (2015) compared cataloguing and classification education in the United States, Brazil and South Africa and discovered that the LIS curricula are more similar between the US and South Africa than to Brazil. They mention that it would be worthwhile to explore such differences more deeply. These differences include the fact that Brazilian education is mostly influenced by foreign education. Ocholla *et al.* (2015) note that the Brazilian government sent professors to Canada, France, UK, Spain and the USA to acquire their PhDs in LIS. These professors form the nucleus of Brazilian LIS professors and researchers that have transformed the current Brazilian LIS education. Ocholla *et al.* (2015) provide an example based on documentary analysis named in Brazil as subject analysis and documentary languages for indexing languages. They state that it reflects the French and Spanish influences on Brazilian LIS education. Studies on indexing in archival science as well as of diplomatics in LIS reflect the Canadian influence on the country's education, while there is ever-growing research in classification theory with a British influence. The wide range of research on information

retrieval and also the widespread use and teaching of DDC reflects a robust American influence on Brazilian education.

Based on the historical development of the entire LIS profession, cataloguing has existed ever since the introduction of the profession; however, not much attention was given to it in the South African context. Mutula and Tsvakai (2002:63) discovered that African information centres use American classification schemes to classify material; for example the DDC, LCC and Universal Decimal Classification (UDC). However, those tools are limited in accommodating African works (including works from South Africa). The authors point out that during 2002, not much had been written on cataloguing and classification in South Africa, in fact even to date not much research has been done in this field.

Raju (2005:76) mentions twenty-five core areas of the LIS profession in South Africa based on the LIS job market. Among those core areas, cataloguing and classification were considered to be some of the most important courses for the LIS profession. Therefore, the importance of cataloguing and classification education remains great among LIS schools across the country. Cloete (2005:57) finds that cataloguing in South Africa is the core of the LIS education. Shongwe and Ocholla (2013:230), in a study that was aimed at tracing LIS graduates of the Department of Information Studies (DIS), found that cataloguing should be taught in LIS schools to all information specialists as it is required by information centres employing information workers. This strengthens the importance of cataloguing and classification in the current century dominated by technology.

2.5. Levels at which cataloguing and classification is offered

Studies conducted in Botswana by Kgosiemag (2005:8) and by Davis (2008:187) in the USA show the importance of cataloguing and classification education in LIS schools if offered theoretically and practically. Kgosiemag (2005) distinguished the two sides of the curriculum by mentioning that students are meant to be taught theory in class by academics; thereafter, students must attend a practicum in either an academic or a public library. This practicum or field work should be supervised by a qualified cataloguer. This implies that components of the course outlined theoretically in class should be practised practically by students through fieldwork, internships, or as volunteers.

Cataloguing and classification education in developed countries is taught to both postgraduate and undergraduate students pursuing librarianship qualifications. Davis (2008:187) points out that cataloguing is offered as either an introductory course or an advanced cataloguing and classification course. He ascertains that this kind of education is offered in LIS schools in the Western world. Bowman (2009) and Ma (2005) state that cataloguing and classification is offered to those who are being trained to be librarians either doing undergraduate study (the National certificate in Library and Information Studies), or a diploma in Library and Information Science, a bachelor's degree in Library and Information Science, a postgraduate education diploma, a postgraduate diploma in Library and Information Science and a master's in Library and Information science.

Ma (2005:74) reports that in China, education for cataloguing and classification takes place at four levels, which are: (1) basic professional training, (2) junior college (3) undergraduate training and (4) graduate training (towards a master's or a higher degree). Ma (2005:76) defines basic professional training as offered by vocational or technical schools which provide students with basic knowledge and skills on cataloguing and classification. However, gradually junior colleges are replacing such institutions. Ma (2005) explains that such institutions are the ones that offer practical skills on cataloguing and classification education while briefly introducing some theories and principles so that students can develop skills for cataloguing and indexing and are capable of solving critical problems in their information centres. Ma (2005) reveals that in the undergraduate training done at universities or correspondence institutions, students understand the theories, rules and principles of cataloguing and are able to revise and compile a thesaurus, classification scheme and cataloguing rules. Graduate programmes provide advanced cataloguing and burning issues in cataloguing and classification education. At this level, students can solve practical problems.

Gorman (2002:4) also mentions two parts of cataloguing education in USA and Canada. He states that there is cataloguing and classification for those who wish to be cataloguers and cataloguing and classification for those who wish to apply the cataloguing skills and knowledge as librarians. Gorman (2002) avers that cataloguing and classification is usually intended for undergraduates, while the latter is usually designed for postgraduates. In rationalising the above statement, postgraduate students are the ones who take cataloguing as their lifelong careers; therefore, they are taught advanced cataloguing. Undergraduate students should learn the course to understand the collection and the LIS profession at large.

Hence Carbo (2011:5) articulates that no information specialist should be expected to deliver service fully without cataloguing and classification knowledge.

The South African perspective is that cataloguing is taught to both postgraduate and undergraduate students (Ocholla & Ocholla, 2014:3). Ocholla and Ocholla (2014) found that cataloguing and classification education is offered to senior students, often starting in their second, third or fourth year of study. However, in some cases these courses are offered at the first year of university study, but only basic cataloguing and classification is offered at this level. Ocholla and Ocholla (2014:3) mention that only two universities are currently offering cataloguing and classification at postgraduate level. They are the University of KwaZulu-Natal and the University of Cape Town. However, the content is similar to the course offered by some other universities at their undergraduate level, but pitched, pedagogically, at the postgraduate level. @ @ @

Cloete (2005:55) emphasises the teaching of cataloguing and classification education in South Africa and points out that the curriculum should be developed based on the outcomes approach that was adopted by the Department of Education of South Africa in 1997. This approach focuses on learner-centred education which is about the fact that the student should be able to think constructively and critically in order to make decisions. The outcomes-based education promotes communication skills, critical thinking, problem solving and teamwork skills. Cloete (2005) further mentions that the curriculum must be designed by the combination of practising cataloguers and academics in order to keep up with the current trend of the profession. Cloete (2005) emphasises that the course should be taught from a technocentric viewpoint, while not forgetting traditional cataloguing, since LIS schools serve both urban and rural information centres.

More currently, Ocholla and Ocholla (2014) and Ocholla *et al.* (2015) show that cataloguing and classification courses are taught separately and the course names vary from university to university. However, these authors declare that the course names vary at different LIS schools, but the content is the same. The course names include Information Retrieval; Cataloguing and Classification; Organisation of Knowledge; Descriptive Cataloguing; Subject Analysis; Bibliographic Control, Basic Descriptive Cataloguing and Classification; Subject Organization; Theory of Cataloguing and Classification; Practical Cataloguing; Computerised Cataloguing; Information Retrieval (Classification); Databases and Database

Construction (Cataloguing); Basic Cataloguing; Basic Classification; Indexing and Thesaurus Construction; Special Cataloguing and Advanced Classification

Based on the above discussion of international and South African cataloguing and classification perspectives, students at all levels of education should be taught cataloguing and classification since it is required for proper library functioning. Furthermore, components of the course taught in class should also be practised in the library as part of the curriculum based on cataloguing and classification education.

2.6. The importance of cataloguing and classification education in LIS schools

As the economy grows, and the number of information documents/materials grows in all information centres, the demand for information organisers is becoming huge. It is important to show how vital cataloguing and classification is in our modern society. It is clear that cataloguing and classification is the prime requirement for organising a collection for easy retrieval by users either in a physical or digital space, since if the collection is not thoroughly organised it will be useless. Orbih and Aina (2014:89) state that the acceptable and important manner of organising information in information centres is cataloguing and classification. Therefore, cataloguing and classification education is very important.

Gorman (2002) asserts that the Information Science-based schools which seem to have taken over librarianship schools have lost faith in traditional missions, policies, programmes and the values of libraries and are more interested in other areas of Information Science. Gorman (2002) mentions that these schools are more interested in ICT and have abandoned the core areas of the profession, for instance cataloguing and classification. They believe that cataloguing and classification can be practised by anyone without any cataloguing and classification education. However, Gorman (2002:5) refutes such ideas. He argues that if staff do not have cataloguing and classification skills, they cannot be productive in a library environment. This implies that all information workers should learn at least introductory courses to cataloguing and classification or information retrieval. Cabonero and Durendo (2013:2) have the same view, that people who never experience or indeed hate cataloguing are not proficient information retrievers and cannot be competent librarians. These authors also argue that everybody doing LIS education should learn cataloguing and classification as it is still considered to be the pillar of the profession.

Gorman (2002:4) emphasises the importance of teaching cataloguing and classification by pinpointing that “a would-be doctor student would have to take anatomy at an accredited medical school taught to national standards yet a would-be a librarian should not take cataloguing and classification at the accredited library school as a compulsory, core and backbone of the profession”. Gorman claims that it is not arguable why the latter is not of paramount importance as anatomy is to doctors. Therefore, cataloguing and classification remain the basis of the LIS profession.

Deducing from these ideas, it is shown that cataloguing and classification is the most essential aspect of LIS education and should be taught continuously in LIS schools. Ocholla and Ocholla (2014:1) also confirm that cataloguing and classification is the backbone of librarianship and they find it largely useful in scrutinising and synthesising the library information services or collection in order to provide the best service to the community being served. Without cataloguing and classification it would be difficult to locate materials in the larger collection in the library; too much time would be wasted, users would lose interest in searching the collection and materials would be lost within the jungle of collection. According to Yusuf (2015:45), cataloguing and classification helps a user and the librarian to manage the collection of the library. Cataloguing is also necessary for a collection when it becomes too large to help identify items within the collection without any waste of time and effort. Therefore, cataloguing and classification education would always remain important in LIS schools.

It is therefore clear that without cataloguing and classification, the librarianship profession would not exist proficiently. Materials would be lost in the disorder of the collection and people struggle to find information required for their daily needs. For users to fully utilise the library’s collection the nature, location of these materials, extent and interrelationship must be clearly identified. Without the perfect library catalogue produced through cataloguing processes, the identification of such materials is impossible, leading to the failure of the entire information centre to serve appropriate information to the right person at the right time.

2.7. The cataloguing and classification curriculum and teaching models

LIS education in South Africa mainly emanates from developed countries, especially the USA. Therefore, to elaborate on the content taught in cataloguing and classification, the literature from developed countries will be used as a reference point. Martin and Mundle

(2014) have reviewed literature from 2011-2012 on cataloguing and classification publications. They found that the most discussed topics range from cataloguing and classification history to the emerging cataloguing standard termed RDA. Several studies show common content that should be taught in cataloguing and classification (Davis, 2008). Davis (2008:188-189) in his study conducted in the USA, divides cataloguing education into eight areas:

- Organisation - focusing on the introduction to general principles and theories of bibliographic control and basic knowledge of information organisation. Topics that are usually included here are an introduction to theories and principles of organising bibliographic information or fundamental concepts of knowledge organisation.
- Basic cataloguing, focusing on the introduction to knowledge and related skills to the organisation of information and cataloguing. These skills include subject analysis, AACR2, MARC21, cataloguing rules, LC, DDC;
- Advanced cataloguing (AC), focusing on details, complex aspects of cataloguing that may include hands-on experience in creating bibliographic records and practical application of the classification schemes or cataloguing rules.
- Subject analysis, focusing on subject cataloguing and classification; this includes some form of hands-on practical experience.
- Indexing and abstracting concentrate on the principles, practices and applications of indexes and abstract or control vocabulary.
- Metadata schema and applications focus on advanced cataloguing, dealing specifically with electronic resources in the library.
- Serials, focusing on the bibliographic control of serials.
- Other focuses on issues and topics not covered in any of the seven categories; these include music, school library media centres or technical services.

Hsieh-Yee (2008:97) adds to this by emphasising that in responding to the current trends of information and communication technologies, a cataloguing and classification curriculum should be reformed to be compatible with the changes in a market. Cloete, Snyman & Cronje (2003:225) conducted a study in South Africa and discovered the following core areas of the LIS profession: library and information practice; information retrieval (including cataloguing and classification training); library and information technology; and user studies.

There are similarities between the broad areas identified among the findings of these authors.

In a nutshell, several components are mostly offered in cataloguing and classification in the US, China, Brazil and in Africa (South Africa). These include AACR2; abstracting; authority control; bibliographic control; bibliographic description; cataloguing: theory, process, tools, manual, computerised, online; classification: theory, history, schemes, process, policies; DDC; descriptive cataloguing; Dublin core; metadata; indexing; information retrieval; LCSH; library catalogues; MARC 21; metadata; subject organisation and access; thesaurus construction and RDA (Ocholla & Ocholla 2014; Al Hijji, 2012; Martin & Mundle 2013; Ocholla *et al.*, 2015).

The areas identified by the above authors share three broad categories identified by Carbonero and Dolendo (2013:20): bibliographic description, subject analysis and classification. These are broad areas that should be taught in an LIS curriculum. Bibliographic description is all about coding the data of the record into MARC21, while subject analysis comprises discovering which subject the item belongs to; for instance technology, mathematics, etc. Welsh and Batley (2012) define classification as the process of assigning call/class numbers to items being catalogued. The cataloguer adheres to classification schemes like DDC, UDC or LCC.

2.7.1. Models for teaching cataloguing

The pedagogy used in South Africa for cataloguing and classification is largely influenced by the USA (Mutula and Tsvakai, 2002). Normore (2013:174) identifies a number of methods that are used in LIS schools to teach cataloguing and classification. He mentions face-to-face interaction, distance learning, and linking theory with practice as teaching methods. Normore (2012:175) also defines the face-to-face method as the traditional method in which a cataloguing laboratory or a physical space is used to teach cataloguing and classification. Students are given common cataloguing tools. Materials to be catalogued are shared and subsequent support from instructors and their assistants is received in class.

Cloete (2005) and Miller *et al.* (2012) define distance learning as the method in which students and educators use various technologies for teaching and learning cataloguing and classification through the use of web-based training programs and communications. This is largely technology driven and students do their work anywhere provided they have access to the Internet. The main disadvantage of distance learning is that most people in developing

countries lack technological skills and others do not have material needed to access their work (Cloete, 2005).

Normore (2012:180) further asserts the importance of ensuring that theory is linked with practice through the use of internships, practicums and volunteering. Normore (2012:180) points out that exposure to the actual practices of cataloguing and classification is an effective way for students to acquire theoretical notions that constitute the core bases of the field. Practical work also helps to test whether students understand the theory taught in class. The engagement of LIS schools with practitioners helps in ensuring that students keep up with the trends and hot issues that are occurring in the cataloguing and classification profession. Furthermore, Hinder in Ocholla and Ocholla (2014:6) suggests drill and practice which is explained as the process in which multiple repetitions of the same activity are performed until the objectives of the session are achieved. This model requires that the instructor gives much time to students while they are doing their practical work. Preferably the number of students in the class should be small.

Cloete, Snyman and Cronje (2003) point out that there are three popular strategies of teaching cataloguing and classification; these include contact classes, distance learning and in-service training. Ocholla and Ocholla (2014) concur with these authors by reporting that in South Africa there are various methods used to teach cataloguing and classification. These include traditional methods like lectures and practical classes (contact classes). They further indicate other relevant methods used in South African LIS schools, which include group discussions, online exercises, workshops, seminars, projects, practical assignments, case studies, and quizzes.

This infers that these methods have to be integrated to achieve the objectives or learning outcomes of the cataloguing and classification curriculum. For instance, when contact classes are used together with practical or hands-on education, students can obtain both theory and hands-on experience. This will increase their understanding of the cataloguing and classification course.

2.8. Cataloguing and classification job requirements and functions

Generally, it is required of a librarian to possess skills and knowledge of cataloguing and classification in order to meet the demands of the information society. Carbo (2011:5)

expresses the view that as technology changes continuously alongside the gathering of information from various information sources which were previously unimaginable, requirements for librarian change too. Consequently, cataloguing librarians must adapt to meet the demands of their targeted populations. Glasser's, in Carbo (2011:2), states that "to meet the challenges of today's cataloguing positions, library students must develop a broader set of skills that, in addition to the traditional theory and practice of principles of bibliographic control and metadata standards, include management skills, computer skills, the ability to work in a team, flexibility, and, perhaps most important of all, a willingness and ability to learn and embrace continuous change." This also appears in Ocholla and Ocholla (2014:5) who add that lifelong learning should be in a cataloguer's veins in order to keep pace with the continuous changes that occur in cataloguing and classification. The implication is that cataloguing's traditional requirements, e.g. subject analysis, descriptive cataloguing and classification, should be integrated with activities such as metadata creation and the management of electronic resources to strengthen the foundations of the profession through quality service.

A number of studies based on cataloguing practices reveal that cataloguing is a scarce and difficult skill (Ocholla & Ocholla, 2014; Lussky, 2008; Carbonero & Dolendo 2013). This implies that a would-be cataloguer should possess higher cognitive reasoning and be an individual who is entirely devoted to his or her work in order to be up to date; hence, the cataloguing practices are dynamic.

Lussky (2008) and Carbonero and Dolendo (2013) provide three broad areas that cataloguing and classification comprise. Carbonero and Dolendo (2013:3) reveal that a cataloguer must be capable of doing descriptive cataloguing (identification of access points or the main entry and the appropriate use and understanding of International Standards Bibliographic Description), subject analysis (subject of the work and tracings) demonstrate an ability to identify a catalogue entry directly under the most specific subject heading that accurately represents its content) and lastly classification (assigning class numbers through the use of DDC, UDC and LCC). They pinpoint that for a librarian to be considered a cataloguer he/she must have a bachelor's degree in LIS. Alternatively, a postgraduate qualification in LIS with a major in cataloguing and classification would be an advantage to be considered for a cataloguing position.

Carbonero and Dolendo (2013:15) concur with Lussky (2008) that technological skills are required from cataloguers in order for them to organise digital collections, hence most information sources come in a digital format. These skills include the following: knowledge of imaging technology, mark-up languages, optical character recognition, indexing and database technology, cataloguing and metadata and lastly web technology. This shows that as the cataloguing practices change, practising cataloguers should continuously be developed through workshops, lifelong learning and/or in-house training to keep abreast of current trends in their area of specialisation.

Carbo (2011:3) points out that due to the digital tsunami of new materials which include databases, electronic resources, repositories, web searches, online catalogues, e-books and more that has been brought to the library environment by technological invention, cataloguers are required to reinvent their skills and knowledge. Carbo (2011) mentions that due to these new digital information materials, it is a requirement that a future librarian should possess skills based on RDA, hence AACR2 seems to be unsuitable for accommodating the coding of those new materials in the coding system known as MARC 21. This reveals that AACR2 may not be of much use in future, as most documents are generated in digital format nowadays. Carbo (2011:6) mentions that RDA uses the FRBRized concept application which permits the cataloguer to be better prepared in organising the vast resources of information available and utilising the standardised descriptive access tools in guiding researchers to materials that might otherwise not have been found.

However, the issue remains as seen by MacLeod and Callahan in Davis (2008:184), in a study conducted in the USA it was found that cataloguers during their entry level are usually unprepared yet they are taught in LIS schools. These authors stated this based on hands-on experience. Most students would graduate with insufficient skills and knowledge of cataloguing and classification. Al Hijji and Fadlallah (2012:278) observe as professional cataloguers that being a bibliographic control worker requires one to have comprehensive knowledge of rules, methods and principles of bibliographic control and broader skills in the utilisation of its tools and resources. This is so that accuracy is ensured for entries, the assignation of class numbers of catalogued items and subject headings; in order to improve the quality of the library catalogue. Yet this is not the case, hence most of the LIS schools complain about the huge curriculum that has to be covered in a short period of time, making

it impossible for cataloguers to reach their entry level adequately prepared for their respective careers, (Cabonero & Dolendo,2013:19).

In South Africa, Cloete (2005:58) reports that advertisements were scanned from newspapers and the following requirements and responsibilities were listed for the graduate to be qualified as a cataloguer. Cloete (2005) presented this information in table form as follows:

Table 1: Cataloguers' requirements; Adapted from Cloete (2005:58)

Requirements	Responsibilities
Knowledge and understanding of AARCR2, DDC, UDC, LC, LCSH, NLM classification, Mesh and indexing Dublin Core	Cataloguing, classification, and subject analysis of: monographs, audio-visual materials, periodicals and in-house reports
Proven expertise in online cataloguing	Maintaining authority catalogue files
Automated cataloguing on USMARC/MaRC21 based system	Original and copy cataloguing
Knowledge of URICA, INNOPAC, CPALS and OCLC systems	Ability to catalogue materials
Online cataloguing on SABINET, SACat, WorldCat and SABICAT	Ability to use local databases to search and catalogue documents

This implies that education for cataloguing and classification should include the content displayed by the table above since the employer requires it at the workplace. Among developed and developing countries, information is organised in the same manner. Principles, standards and coding conventions are the same across the world. Be it in South Africa or America, the understanding of MARC 21, AARCR2, DDC, LC, abstracting and indexing is required (Ocholla *et al.*, 2015).

Generally, the theory or the curriculum offered by any institution should meet the demands of the job market or employers' expectations. Witbooi (2004:92), states that theory should be linked with practice. LIS schools should offer education that is relevant to the practices of information centres. The content of cataloguing and classification and the requirements which employers apply before employing a cataloguer have been discussed above. However, the question still remains whether the cataloguing and classification education tht exists meets the requirements of the profession. More recently, Raju (2016:13) has indicated that the emerging technological drive in a currently digitised higher education has presented the LIS profession with the challenge to revise the traditional roles of organising and providing

access to information materials to the new technology based requirements, with tools and systems that have changed, yet with the aim of providing information access in all formats that remains.

Davis (2008) conducted a study in the USA aimed at evaluating whether LIS schools in fact teach what is expected to be taught to librarians and whether they are adapting to the changes in the profession of cataloguers. Okello-Obura and Kigongo Bukenye (2011:1) find that due to the changing environment and employers' demands, for instance the diversity of the main employers of information workers, LIS schools have changed their departments' names, courses and degrees and channelled them towards the demands of the job market which includes archives, libraries and other information centres. This was done to link the theory with library practices. For instance, with the use of metadata Dublin core [?] in libraries, LIS schools had to teach that units [?] in cataloguing and classification curricula. El-Sherbini (2008:49) reviewed literature in USA for the years 2005-6 and discovered that among topics that were discussed for the future of cataloguing education and the requirements of job markets, were included knowledge on FRBR, RDA, applications and relations of metadata to MARC, cataloguing tools and standards and authority control. However, this author discovered that FRBR and RDA were not commonly known during that time, since they were in their discovery phase, yet other libraries like, for instance the American Medical Library and the Library of Congress, were already planning to implement it.

Ocholla and Ocholla (2014) in South Africa point out that most of the requirements needed in the job market are taught by LIS schools but RDA is still lacking in South African schools and most libraries are still using AACR2. One can assume that developing countries are one step behind their Western counterparts in developing their bibliographic records; that is the reason for the slow development of cataloguing.

Ocholla & Shongwe (2013:231) stress that cataloguing and classification in the job market is vital. Every employer of librarians or information specialists requires that individuals understand bibliographic control in order for them to understand the collection in the library environment. They specified AACR2, Dspace, MARC21, USMARC SABINET, digital asset management system(s), Library of Congress rule interpretation, metadata schema, OCLC connection, integrated library systems , bibliographic formats, UNICON, SA Catalogue, World Catalogue, OPAC, RDA, library Web 2.0, millennium system and INNOPAC.

This implies that in South Africa much attention should be given to cataloguing and classification in terms of requirements for the curriculum taught by LIS schools. While the course is taught, most authors found that students are usually unprepared for their first-time posts as cataloguers. Therefore, the pedagogy, the units and the educators of the course should be scrutinised thoroughly in order to meet the demands of the markets which are libraries and other information centres.

Many studies overseas and in the South African context have been conducted regarding cataloguing and classification education, but very little and almost nothing in the South African context has been done on checking the link between education and training against job requirements. This study may show the strengths and weaknesses of the cataloguing and classification curricula and also the cataloguing practices. This may enable the academics to make informed decisions when deciding on the cataloguing and classification curriculum. Further, it will also help the employers of librarians make informed decisions when creating the duties of cataloguers and know exactly who to employ as a cataloguer.

2.9. Summary

The literature for this study was reviewed in order to determine what has been written on the cataloguing and classification subject in relation to job requirements. Conducting this literature study was helpful in evaluating the current state of cataloguing and classification education in the world and particularly in South Africa, through looking at the historical development of the LIS profession and cataloguing and specifically classification education. The components or units taught by LIS schools in cataloguing and classification education were also found in the literature. Most studies show that bibliographic description, subject analysis and classification are broad categories of the cataloguing and classification education that are largely taught by LIS schools. Additionally, requirements for cataloguers were discovered from the literature; they include current and outdated requirements required by the LIS job market in the world and also in the South African context. However, in the South African context little has been done concerning the job requirements of cataloguing job advertisements: the only study that the researcher discovered was by Cloete (2005). Likewise, no study has been conducted on the link between the curriculum and the job requirements of cataloguers in South Africa. Therefore, it is assumed that this is the first one. The following chapter will provide a detailed procedure on how this research was conducted.

CHAPTER 3: RESEARCH METHODOLOGY

3.1. Introduction

Singh (2013:74) defines research methodology as the systematic study of methods that are, can be, or have been applied within a discipline, while Neuman (2014:127) defines methodology as “a scientific system of explicit rules and procedures upon which research is based and against which claims of knowledge are evaluated”. Ngulube (2003) condemned most studies in LIS for failing to display the methods used in conducting research. This chapter explains in detail the methodology that was adopted to conduct this research.

It begins by discussing philosophical perspectives, research methodology, research methods, sampling technique, sample size, targeted population, data collection instruments, data collection procedures and how data sets were analysed.

3.2. Philosophical perspective or paradigm

Remenyi (2001: 39) states that whether one is considering conducting research in the social sciences, physical sciences or life sciences, it is important to know his/her standpoint or how one views the world, since the research process begins with a manner or method of viewing the world around us. Greener (2008) proceeds by stating that there is no research without a philosophical perspective. This philosophical perspective guides the researcher in ensuring that the research is conducted scientifically using correct strategies, approaches, methods, and instruments in collecting and analysing data for the research at hand.

Creswell (2014:35) refers to philosophical perspective as comprising the basic beliefs or ideas that direct the action in the research project. Creswell (2014) observes that these ideas remain hidden in the research process. The paradigm is made up of ontology and epistemology (Mack, 2010:5). These include realism, positivism, constructivism, pluralism, interpretivism and pragmatism. Ontology is defined by Mack (2010:5) as claims and assumptions that are made about the nature of social reality, claims about existence, what it looks like, its components and how those components interact. Ontological assumptions are divided into two main streams: realism (the world of objectivity) and relativism (governed by subjectivity). Flick (2015) refers to realism as a worldview that ascertains that the truth can be found only when the right method is used, facts are facts and there is no subjective way to

determine the truthfulness of a phenomenon. However, Ritchie and Lewes (2014) argue that there is nothing like pure facts. They are all from the outset selected from a worldwide context by the events of our mind. Relativism is characterised as the one perspective in which interpretations are used in constructing social reality (Ritchie and Lewes, 2014).

Ontologically, relativism or constructivism was adopted in this study. This is because the researcher believes that the nature of the phenomenon being investigated is subjective and interpreted differently by different people. The cataloguing and classification teaching and learning world as well as the job requirements were viewed through the use of interpretations which are basically associated with subjective ways of viewing the world.

Epistemology when distinguished from ontology can be defined as how one acquires knowledge about reality. Poetschke (2003:3) describes epistemology as the theory of knowledge. An individual's epistemological position reflects the way we can know the world. There are three types of epistemological assumptions identified by Flick (2015:20): positivism, interpretivism and pragmatism. Flick (2015:20) defines positivism as an assumption that considers only phenomena confirmed by the senses to be warranted to be knowledge. Furthermore, Flick (2015) states that in positivist research, statistics are used the most and it is characterised as the natural sciences' assumption. Poetschke (2003: 5) defines interpretivism as the viewpoint whereby there is nothing considered to be the real world; rather the world is constructed socially.

However, for this study, epistemologically, interpretivism was adopted as the researcher's position in viewing the world. Interpretivism is defined by Poetschke (2005:5) as the view that there is nothing to be considered a real world; it is rather constructed socially and discursively. The researcher believes that there is no objective way of studying phenomena, but that there is an interpretive approach that can be used to collect data and analyse it. That approach was used in this study. Therefore, the social reality for this study was constructed through analysing and interpreting cataloguing and classification course outlines from eight LIS schools in South Africa and analysing cataloguing job advertisements as well as interviewing cataloguers. It is interpretive because the researcher views cataloguing and classification as a social structure, which exists based on interpretations.

3.3. Research strategy

There are various research strategies that can be used for research purposes. Soiferman (2010) identifies deductive, inductive, abductive and retroductive research strategies. Blaike (2010) refers to deductive strategy as one that uses an existing or a new theory to answer a “why” question in social research. The aim of this strategy is to find an explanation for an association between two concepts through suggesting a theory, the relevance of which can be tested. Blaike (2010:86) explains a retroductive research strategy as one in which the sole goal is to unveil underlying mechanisms in a certain context, and explain observed regularities. The author further states that the strategy’s logic relies on the process of building hypothetical models of structure suggested, thereby producing to empirical phenomena. Blaike (2010:88) provides a definition for the abductive research strategy as one that can be used to answer all types of questions. However, it answers the why questions by providing an understanding rather than an explanation and it also provides reasons other than causes.

For the purposes of this study, the inductive research strategy was adopted. Thomas (2006:238) defines the inductive research strategy as a strategy in which the researcher primarily reads the raw data to derive concepts, models, or themes through interpretation of raw data collected from the targeted population. Thomas (2006:238) further points out that the inductive research strategy’s purpose is to allow the findings of the research to arise from main, recurrent or significant themes from raw data, beside the restraints enforced by structured methodologies. The study was inductive in the sense that generalisations were made after data were collected and analysed.

3.4. Research approach

There are three research approaches that are used when conducting research. Creswell (2009:3) identifies them as quantitative, qualitative and mixed method research. Cresswell (2009:3) is of the view that the selection of the research approach adopted by the researcher ultimately relies on the research problem, type of data to be collected, philosophical perspective chosen and lastly, the research approach to be used in the research process.

A variety of authors, for instance Neuman (2014), Singh (2013), Creswell (2009) and Davies (2007), are of the same view, namely that quantitative research refers to the organised empirical investigation of social phenomenon via statistical, mathematical or computerised

methods, for example experiments. Brink, Van der Walt and Rensburg (2012) state that quantitative research provides strong evidence concerning the research problem being investigated. This implies that a logical process is used where numerical data and measurements are employed in gathering information about the case or problem being investigated. These authors clarify that quantitative research is built up by higher precision or rigour, causality (relationship between variables), probability and lastly objectivity.

Since qualitative and quantitative approaches represent different ends of the continuum, Creswell (2014) mentions that mixed method research resides in the middle of the continuum. This is because it incorporates characteristics of both qualitative and quantitative research. When one is conducting mixed method studies, two methods have to be seen throughout the study. Greener (2008) states that when considering using mixed method research, a researcher should integrate philosophical perspectives and also research designs, hence the mixed method research lies between the extremes of the qualitative and quantitative continuum. However, for this study, qualitative research was used as a relevant approach.

3.4.1. Qualitative research

Creswell (2009:4) states that qualitative research is one exploring and understanding the way individuals or groups ascribe to social problems.

Every research project termed qualitative has to ascribe to some of these characteristics, if not all of them. Flick (2015:11) states that qualitative researchers select participants purposively and incorporate small numbers of cases according to their relevance. The collection of data is designed more openly and aims at a broad picture made by reconstructing the case under study. Flick (2015) also points out that in qualitative research there is much use of open-ended questions and participants are expected to answer those questions using their own words and perspectives rather than being influenced by the researcher's perception of life.

Creswell (2014:30) declares that qualitative research is best suited to addressing a research problem where little is known about the phenomenon and one wishes to explore more. Flick (2015:31) explains that qualitative research is not standardised; rather it is designed to be as open as possible. Flick (2015:31) further mentions that only a few cases are studied; however, they are analysed to their full complexity.

Researchers who are interested in studying meaning and describe the in-depth understanding of human experience, for instance pain, grief, hope, or caring or unfamiliar phenomena such

as female genital mutilation and many more, would find it difficult to use statistical methods. Therefore, the qualitative research approach is more relevant to such instances where understanding of behaviour or social phenomena are being investigated. This implies that the approach is relevant to this research since it is looking at the link between the curriculum and the job requirements of cataloguers in South Africa, which is the social problem under investigation.

The researcher collected data using qualitative methods known as qualitative content analysis. The qualitative researcher utilises interpretations to make meaning of data. This research design used many qualitative methods such as qualitative content analysis as methodology, sampling strategies associated with a qualitative approach (purposive sampling), data collection instruments (interviews and content analysis schedules), data analysis, interpretation and representation using qualitative content analysis.

3.4.2. Research methods

Research methods are defined as tools by which information is gathered or collected for the study. Ndwandwe (2009: 39) defines a research method as the first step in implementing a research project. Greener (2008:10) defines research methods as strategies or frameworks arranged to collect and analyse data in a manner that aims at uniting relevance to the aim of the research. Kumar (2014:168) states that research methods act as a structure for the research being conducted. It is a procedural plan to be followed in collecting, measuring, and analysing data, and it also ensures ease of the flow of research from one stage to another. Creswell (2014) and Leedy and Ormrod (2007) agree that there are various research methods used in social science research; these include those used in quantitative and qualitative research design. Creswell and Creswell (2009:46) state that there are surveys, qualitative or quantitative content analysis, experiments, case studies, field research, existing statistics and many others. These research methods are usually related to a certain research approach; for instance, to qualitative or quantitative research approaches. However, Kumar (2014:170) declares that these methods can be used across all studies classified as qualitative, quantitative or mixed methods. Kumar (2014) further notices that selecting a certain method for data collection determines the classification of the study to a large extent. This research has used the qualitative content analysis research method.

3.4.2.1. Qualitative content analysis

Elo and Kyngäs (2008:108) define content analysis as the method that is used where there are no previous studies that have been conducted considering the subject matter. It is a technique of analysing existing verbal, documented and visual data or communications. These authors further state that the qualitative content analysis method can be referred to as a systematic and objective manner of describing phenomena. The aim of qualitative content analysis is to achieve a broader and condensed description of the phenomena. These authors further mention that content analysis is divided into two types: inductive and deductive. Elo and Kyngäs (2008:109) state that an inductive approach is appropriate when prior knowledge regarding the phenomenon under investigation is limited or fragmented. The inductive approach, codes, categories, or themes are directly drawn from the data. This study used inductive content analysis because very little is known about cataloguing and classification curricula when compared to cataloguing job requirements. The results of the method are categories or concepts explaining the phenomenon. Leedy and Ormrod (2007:69) explain content analysis as the systematic and detailed approach of investigating a body of existing materials in order to find patterns, biases or themes. Content analysis includes reviewing human communications like books, newspapers and films and other forms of communication in order to spot patterns, biases and themes within them (Williams, 2007:69). Williams (2007) further points out that the method is designed to obtain certain characteristics from the content being reviewed. Williams (2007) mentions that content analysis can also be performed with any written material, interview transcription or media products. Zhang and Wildemuth (2016:320) and Elo and Kyngäs (2008) concur with Williams (2007) that a qualitative content analysis method can be used along with interviews. Zhang and Wildemuth (2016) further state that this method is often used to analyse interview transcripts in order to reveal people's information related behaviours and thought.

In this study, course outlines from eight LIS schools were critically and systematically scrutinised into themes or categories. Then a content analysis of cataloguing and classification job advertisements was also conducted. Ultimately, content analysis of semi-structured interviews (see Appendix D) was conducted with professional cataloguers from public cataloguing centres and academic libraries in KwaZulu-Natal to supplement data from LIASA and newspaper scanning of LIS job advertisements.

During the preparation phase of this inductive content analysis, the researcher selected themes that were used for the analysis of the curriculum of LIS schools teaching cataloguing

and classification. These words include aims of the courses, outcomes of the courses and lastly, content offered in these courses. Thereafter, the organisation stage which includes open coding of the qualitative data occurred in the coding sheets based on the above mentioned themes. Data with similarities were coded together and the one with differences was coded separately. Subsequently, abstracting of the categorised data took place; this stage is referred to as reporting (Elo & Kygan, 2008:110).

The very same method was used in coding data from cataloguing job advertisements and interviews. Three steps involved in inductive content analyses, which include the preparation phase, an organising phase and lastly a reporting phase took place. The researcher selected themes that were used to analyse cataloguing job advertisements and interviews. During the organising phase, the researcher read academic and public cataloguing job advertisements as well as interviews, while notes were written on the job advertisements and interview transcripts. Then those notes were coded in coding sheets that have various categories. These categories include sectors advertising the jobs; educational requirements for these jobs; experience required; the skills, knowledge and attitude required and finally duties and responsibilities of the advertisement were coded. One transcript was specifically for job advertisements and the other for interviews. The following categories were used to code interviews: daily duties of the cataloguer, years of experience as a cataloguer; qualifications possessed by the cataloguer and levels in which cataloguing was offered in LIS schools. Further, these categories such as the tools used for cataloguing and classification, sufficiency of the qualification, skills, knowledge and attitudes were also coded on the transcript. Lastly coding of these categories took place as well, these include sufficiency of the curriculum of cataloguing and classification offered by LIS schools. Two other categories of the analysis of the interviews were not part of the objectives, however; they directly influence the functions of the cataloguers in the library environment. These include challenges and future opportunities of cataloguing; they were also coded. After that, similar findings from job advertisements coding sheets were grouped and similar ones for interviews were grouped as well. Reporting on these two datasets took place.

3.5. Targeted population

Neuman (2014:45) describes the population of a study as the pool of entities, items or individuals that a researcher wants to study. Flick (2015) defines a target population as the entire group of individuals, cases, or set of objects which are meant to be examined, that

possess characteristics that a researcher wishes to investigate. On the other hand, the population can be defined as the group of elements about which an individual wants to make conclusions. The target population for this study is divided into three categories, namely (a) cataloguing and classification course outlines, (b) cataloguing job advisements taken from two national weekly newspapers (*Sunday Times* and *Mail & Guardian*) and (c) job advertisements provided by LIASA and practicing cataloguers from academic libraries and public cataloguing centres based in KZN. Each category is discussed below.

3.5.1. LIS schools teaching cataloguing and classification

A sub- population of this study were cataloguing and classification course outlines in eight LIS schools in South Africa that teach cataloguing and classification. The LIS schools are; the Universities of Cape Town (UCT), Western Cape (UWC), Limpopo (UL), KwaZulu-Natal (UKZN), South Africa (UNISA), Fort Hare (UFH), Zululand (UNIZULU) and the Durban University of Technology (DUT). The other LIS schools are not teaching cataloguing and classification, Ocholla and Ocholla (2014) noted that these schools omit these courses because of their focus. They are information science based than librarianship based.

3.5.2. Cataloguing job advertisements from newspapers and LIASA

Two weekly newspapers were targeted for advertisements, *Mail & Guardian* and *Sunday Times* over a period of three years (2013-2015). These newspapers were selected because they are national newspapers and they have a wide readership (Ocholla and Shongwe, 2013). The period of three years was selected because no similar study had been conducted over this period. Newspapers provided data about the job requirements and functions required by LIS employers of information specialists in South Africa. The LIASA job listserv was also targeted for job advertisements. The 2016 job advertisements were targeted because prior advertisements were not accessible.

3.5.3. Professional cataloguers from academic libraries and public cataloguing centres

To supplement job advertisement data from newspapers and LIASA listserv, professional cataloguers from the province of KZN were targeted. They were specifically targeted because they have the experience of the cataloguing profession and therefore the knowledge and skills needed in the job. Although the study was based on LIS schools teaching cataloguing and classification in South Africa and job advertisements in the whole of South Africa, professional cataloguers were taken from KZN only because the researcher believes that KZN is not different from other provinces when it comes to professional cataloguing and

classification. Cataloguing rules are universal and in South Africa the South African National Library regulates the rules, which are applicable in all provinces. Therefore, the researcher believed that the same information obtained in KZN would be obtained in other libraries in other provinces. In KZN there are four academic libraries, i.e. Durban University of Technology (DUT), Mangosuthu University of Technology (MUT), University of Zululand (Unizulu), and University of KwaZulu-Natal (UKZN) and two cataloguing centres (Umnngeni in Durban and Bessi Head in Pietermaritzburg) which do cataloguing for the whole province. In the four academic libraries there are 12 cataloguers in total and 13 in the two cataloguing centres. In all, there are 25 cataloguers in the whole province.

3.6. Sampling

Sampling refers to the procedure of taking a sample from the targeted population. There are two types of sampling : probability and non-probability sampling techniques (Maree, 2016). Probability sampling refers to a sampling method whereby each and every element in the targeted population has an equal and independent chance to be considered to form the sample of the study (Kumar, 2014:234). These are the probability sampling techniques: simple random sample, stratified random sample and cluster sampling (Maree, 2016). Non-probability sampling methods refer to samples which are selected based on the subjective judgement of the researcher, rather than random selection (Maree, 2016:197). Brink, Van der Walt and Rensburg, (2012) and Maree (2016) state that non-probability sampling consists of the following types of sampling techniques: convenience sampling, quota sampling, purposive or theoretical sampling and special technique sampling which includes snowball or network sampling. This study applied purposive sampling as a non-probability technique.

Purposive sampling is based on the judgement of the researcher. This means that the respondents should meet a specific criterion to be included as part of the sample of the study (Maree, 2016:198). In this study, all eight LIS schools teaching cataloguing and classification were purposefully selected from twelve LIS schools, but only six participated. They were selected specifically because they teach cataloguing and classification (Ocholla and Ocholla, 2014). Two newspapers were also purposefully selected. This is because they have a wide readership, therefore the assumption was that they will have cataloguing and classification job advertisements. The same newspapers were used by Ocholla and Shongwe (2013) to analyse the LIS job market in South Africa. All 2016 job advertisements from the LIASA

listserv were analysed. Lastly, 18 professional cataloguers from a total of 25 were involved in the study. The 18 were interviewed because they were available to participate.

3.7. Data collection instruments

This section explicitly details the tools that were used for data collection. Tools are specific instruments used to gather data for the research (Nkomo, 2010:47). Popular research tools include questionnaires, interviews, content or document analysis schedules, and observation. For the purpose of this study, content analysis and interview schedules were used.

3.7.1. Content analysis schedules

Content analysis schedules were used to collect data from course outlines and job advertisements. Course outlines had their own schedule and job advertisements had theirs. The schedule for course outlines collected data on the qualifications offered, the purpose and outcomes and the content offered (see Appendix B). The schedule for job advertisements collected data on the sector advertising the post; experience required; skills, knowledge and attitudes required and last duties of the cataloguer (see Appendix C).

3.7.2. Semi-structured interviews

Brink, Van der Walt and Rensburg (2012) describe interviews as a method of data collection in which an interviewer obtains responses from participants face-to-face, using telephones or electronic mailing. They further state that interviews are mostly used in exploratory and descriptive research. Interviews can be either structured or unstructured, or semi-structured or non-directive. Structured interviews are performed where the researcher asks questions that are written on the interview schedule (Neuman, 2014:167) while Brink, Van der Walt and Rensburg (2012:158) remark that semi-structured interviews are where there is an element of structured interviews while there are probes that are used to follow the participant. Semi-structured interviews were used in this study, because the researcher wanted to explore more on the research topic through probes. Appendix D indicates the questions that were asked by the researcher to cataloguers. This interview schedule (Appendix D) was designed based on objective 1.4.2 which was based on the job requirements required from cataloguers.

3.8. Data collection procedure

Neuman (2014:167) states that data collected by the researcher or the statement of the problem determines which research design will be used by the researcher. The data collection

process began with obtaining an ethical clearance certificate from the UNIZULU ethics committee, which allowed the researcher to continue with the proposed study. The letter was sent to relevant authorities which the researcher targeted. Specifically, it was sent to LIS schools' HODs (teaching cataloguing and classification), the LIASA manager, two public cataloguing centres and two academic libraries located in KZN.

The ethical clearance certificate, a short proposal outlining the purpose of the study and the letter of introduction from the supervisor were sent to HODs of the eight LIS schools teaching cataloguing and classification via an e-mail requesting course outlines. Out of eight LIS schools, six sent their course outlines to the researcher. Follow-up requests were sent to HODs of the two schools who did not respond, but no answer was obtained until the study was completed.

Newspaper scanning of the sampled newspapers was conducted. Only four job advertisements were found. To supplement that data, an e-mail was sent to the LIASA manager requesting all LIS job advertisements for the year 2016. Cataloguing job advertisements were then selected from a long list and six job advertisements were obtained. Those job advertisements were added to the ones from newspaper scanning and a total of ten job advertisements were thus available for analysis.

To further supplement that data, professional cataloguers were interviewed. Letters were sent to two academic institutions and two public cataloguing centres seeking permission to collect data, and the permission was granted. From all these institutions, eighteen cataloguers were interviewed. Eight cataloguers were from two academic cataloguing centres and ten were from public cataloguing centres. The researcher decided to interview everybody in the cataloguing section to ensure that the desired results were obtained. An Apple iPhone smartphone was used to record interviews, which were automatically uploaded to iCloud for backup purposes. The interviews were conducted by the researcher. Before the interviews proceeded, informed consent was obtained from cataloguers; the researcher explained all the rights that the participant in social science research is entitled to. After the explanation respondents would sign the informed consent form as a sign of agreeing to participate in the research.

3.9. Data analysis

Analysing data means organising, integrating and examining data systematically, searching for patterns and relationships among certain details (Neuman, 2014:477). Neuman (2014) further mentions that analysing data includes connecting it to particular concepts, advancing generalisations, and spotting broad trends or themes. Analysing data broadens one's understanding, expands theory and advances knowledge. A framework for qualitative data analysis proposed by Miles and Huberman (1994) was adopted in analysing data from cataloguing and classification course outlines, cataloguing job advertisements and interviews from cataloguers. This method was adopted because of its openness and its clear steps for analysing qualitative data.

This framework operates under three processes: data reduction, data display and conclusion drawing and verification. These steps occur coherently. The authors noted that data reduction mainly means "the process of selecting, focusing, simplifying, abstracting, and transforming the data that appear in written field notes or transcriptions." Therefore, for this study, this process was applied in cataloguing course outlines from LIS schools. Data was selected, simplified, abstracted and transformed from all course outlines before cataloguing job advertisements and interviews. Data from course outlines was transformed into four themes, namely LIS schools offering cataloguing and classification and the levels in which it is offered, the purpose of the course in LIS schools, outcomes of the course in LIS schools and the contents offered in LIS schools based on cataloguing and classification. In addition, data from job advertisements was transformed into six themes: cataloguing and classification job advertisements; sectors advertising; educational requirements; experience required; skills, knowledge and attitudes required and lastly the duties of the cataloguer.

The last data that was transformed was data from interview schedules which was transformed into fourteen themes, which included: cataloguers' day-to-day experience; years of experience as a cataloguer, qualifications they possess; levels in which cataloguing was offered in LIS schools; time spent on teaching these courses in LIS schools; materials catalogued by librarians; tools used for cataloguing; cataloguing processes for academic and public libraries; sufficiency of the qualification for cataloguing jobs; skills and knowledge required for cataloguing positions; cataloguing requirements/needs for cataloguers; sufficiency of cataloguing and classification curricula offered by LIS schools in South

Africa; challenges facing the cataloguing profession; and lastly future opportunities for cataloguing.

Data display is described as the step that happens immediately after the data reduction. Miles and Huberman (1994) describe this step as providing an organised and compressed assembly of information that allows the researcher to draw conclusions. They indicate that displays can be in the form of extended text, charts, diagrams or a matrix that provides a new way of arranging and thinking about the more textually embedded data. After data reduction, data was expressed in passages of text referred to as themes. These themes were in separate categories based on similarities and differences across all types of data that the researcher collected. Data sets were displayed in the same themes that were used for data reduction for all the data sets.

After displaying data, the researcher was required to conclude and verify conclusions. The framework developers (Miles and Huberman, 1994) ascertain that conclusion drawing involves stepping back to consider what the analysed data mean and to assess their implications for the questions at present. The integral part of verification is rooted in linking the conclusions with the data to check the conformity and validity of the conclusions through repeatedly visiting the result to cross check. Thereafter, the researcher ensured that conclusions are drawn from purely qualitative data obtained from cataloguing and classification course outlines, cataloguing-based job advertisements and lastly cataloguers' interviews. For course outlines this was done through examining data display (step two of the framework) with the actual course outline. For job advertisements, the same process applied. However, for interviews it was a bit tricky because there were three pieces of data that had to be verified to contract reliable and valid conclusions of the study. These include the recorded clips (primary source of information), the transcripts and then the themes of the framework to analyse data for the study. The researcher had to check through all data sets to see whether the results from recordings were corresponding with the ones transcribed, and further to that to check if the conclusions were really from both the recordings and transcripts.

For the purposes of this study, this technique was more relevant because the researcher had to code information from various course outlines from LIS schools in South Africa. Job advertisements from two national newspapers and LIASA for a certain period of time and then narrations or interviews from cataloguers in academic and public libraries in South Africa were also coded. Then these results were displayed, making it easier to draw

conclusions for the study. Lastly, the researcher had to verify the conclusions to ensure that the results of the study are valid and reliable.

3.10. Ethical consideration

Ethics in research is all about what is right or wrong based on the conducted research. Flick (2009:36) defines ethics as norms or standards of behaviour that control moral choices and interaction with others in research. The National Committee for Research Ethics in Norway (2006:5) defines research ethics as the complex set of values, institutional schemes and standards that helps constitute and regulate scientific activities.

The University of Zululand provides guideline and policy documents that show what ethical considerations the researcher should adhere to. These documents ensure that the researcher avoids plagiarising and harming participants and non-participants either physically or emotionally. For this research, participants were respected in terms of confidentiality. The researcher ensured that a letter from the University was submitted to those who would be interviewed. I have declared that every guideline listed in the school ethical guideline document and policies was followed rigorously in order to produce plagiarism free and conflict-free research work. All documents or materials used were cited or acknowledged correctly so no contraventions would be reported in the dissertation.

More specifically, an ethical clearance certificate was issued by the University ethics committee which approved that the study be conducted since it showed a low level of risk to participants. The ethical clearance certificate, the interview schedules, the short proposal and the letter of introduction were sent to all LIS schools teaching cataloguing and classification. Interview schedules were also sent to two universities and cataloguing centres in KZN requesting access to conduct research. Subsequently, permission was granted in by organisations.

Respondents were not asked about their personal details, so as to ensure confidentiality. Privacy and anonymity were factors that were strictly observed. Respondents were assured that data received from them would be treated confidentially and was to be used only for the purpose of the study. During interviews the researcher ensured that he did not divert the interview beyond the study parameters; after each interview a letter of thanks was provided to acknowledge the participant's efforts in participating in the study.

3.11. Validity and reliability

Concepts of validity and reliability in this study were ensured through the use of a pilot study whereby research instruments, specifically semi-structured interview schedules were conducted with the cataloguing department at the University of Zululand. Interviews were conducted with professional cataloguers to determine the validity of the research instrument and also to find out the reliability of the study. Prior to proper analysis of data the content analysis schedule was used to determine if the study would gather the required information from the cataloguing job advertisements. Thereafter, these instruments were approved by the supervisor after the results that they yielded.

3.12. Limitations of the study

This study was limited to LIS schools teaching cataloguing and classification in South Africa. Within LIS schools, only course outlines were targeted to gather data about the contents offered by LIS schools. Therefore, the study's findings were limited only to course outlines since no course providers were interviewed that resulted to some of important results of the study not yielded. Further to that, the study primarily used newspapers' cataloguing job advertisements, which resulted to the few, and brief contented advertisements. This is because most organisations place in the current digital their advertisements online for reasons of cost and time efficiency.

3.13. Summary

In this chapter a detailed explanation of the research paradigm, strategy, approach, methods and sampling techniques used were narrated. This whole study is based on an interpretive research philosophy through an inductive research strategy and it uses a qualitative research approach and content analysis as the research method. Purposive sampling under non-probability sampling was used as the sampling technique for this study. Interviews and content analysis schedules were used as relevant tools to collect data for this research. Also documented are the procedures followed to collect data from the targeted populations. The chapter also expands on the scientific manner in which qualitative data was analysed. It concludes by pointing out the ethical issues that were considered for this research. Refer to Table 2 below for the summary of the methodology of this study:

Table 2: Summary of the methodology

Research question	Respondents	Research method	Data sources	Data analysis strategy
What is in the content of cataloguing and classification courses in LIS schools in South Africa?	LIS schools teaching cataloguing and classification and cataloguers	Qualitative content analysis	Course outlines from LIS schools and interviews with cataloguers in LIS schools teaching cataloguing and classification	Qualitative content analysis using a framework adopted by Miles and Humberman (1994)
Which qualifications include cataloguing and classification courses?	LIS schools teaching cataloguing and classification	Qualitative content analysis	LIS schools course outlines and interviews with cataloguers	Qualitative content analysis using a framework adopted by Miles and Humberman (1994)
What are the job functions and requirements for cataloguers?	Cataloguer job advertisements for academic libraries and cataloguing centres for public libraries	Qualitative content analysis	Cataloguer job advertisements and interviews with cataloguers	Qualitative content analysis using a framework adopted by Miles and Humberman (1994)
Do the cataloguing and classification curricula offered by LIS schools meet the expectations of the employer?	LIS schools teaching cataloguing and classification, cataloguing job advertisements and cataloguers from cataloguing centres	Qualitative content analysis	LIS schools teaching cataloguing and classification, job advertisements and interviews with catalogues	Qualitative content analysis using a framework adopted by Miles and Humberman (1994)

CHAPTER 4: DATA ANALYSIS AND PRESENTATION OF CONTENT ANALYSIS FINDINGS

4.1. Introduction

This chapter presents the results of the study. It begins by presenting the results of LIS schools' course outlines for a bachelor's degree and postgraduate diploma courses. That is followed by results from cataloguing and classification job advertisements.

4.2. Levels of study at which cataloguing and classification is offered in LIS schools in South Africa

The study looked at levels of study at which cataloguing and classification courses are offered. For the purposes of the study and for confidentiality purposes the schools are going to be referred to as LIS school one, up to six. The results indicate that the subject cataloguing and classifications in LIS schools in South Africa is offered at bachelor's degree and at postgraduate diploma levels. This is according to the course outlines analysed, but generally these courses are offered even at undergraduate diploma level. This study could not find any course outlines for undergraduate diploma level, however.

LIS schools two, three and four offer a four-year bachelor's degree in LIS and LIS school one offers a three-year bachelor's degree in Information Science. LIS school one offers cataloguing and classification at first year and second year level, as basic and advanced cataloguing respectively. Classification or subject analysis is offered in the same way, but in the second semester. In LIS school three, cataloguing and classification is offered from the second year to the fourth year. However, in the fourth year, the course becomes an elective. LIS schools two and four offer cataloguing and classification in the third year of study. They offer the course as an introductory course just to familiarise students with cataloguing and classification principles, knowledge and skills. LIS schools one, three, five and six offer a postgraduate diploma in LIS. These LIS schools offer cataloguing and classification for a year. In the first semester, they offer cataloguing and in the second semester they offer classification. In total there are six LIS schools that offer cataloguing and classification in all the above-mentioned qualifications.

4.3. Aims and objectives of the cataloguing and classification courses

This question was directed at determining the purpose of offering cataloguing and classification. The results are presented according to the levels of study starting from the lower levels.

4.3.1. Aims of the cataloguing and classification course at bachelor's degree level

The aims and objectives of the four schools that offer the course at bachelors' level are as follows:

LIS school one indicates its aim as "to provide students with the necessary theoretical knowledge of bibliographical control and its role in the information organisation and retrieval environment".

LIS school two course outline states that the aim of these courses is:

"to empower students with cataloguing and classification skills by teaching them AACR, RDA, MARC and DDC".

LIS school two has only one course outline for the two courses.

LIS school four provides a four-year bachelor's degree. The purpose of cataloguing is stated as: "to familiarise students and provide them with knowledge and skills on current cataloguing theories and practices".

The classification course is aimed at: "Introducing students to the methods and practices for the analysis, synthesis and evaluation of the recorded knowledge and information by means of general classification and in the library environment particularly".

LIS school three's course outline did not state the aims and objectives of the course.

4.3.2. Aims of cataloguing and classification in a postgraduate diploma in LIS

Three LIS schools also offer this course at postgraduate level. LIS schools five and six offer it only at postgraduate diploma level while LIS school one offers it at both bachelor's and postgraduate diploma levels. The aims of the courses at postgraduate diploma level are as follows:

LIS school one states that,

“The purpose of this course is to provide students with the necessary skills to effectively describe and organise information and knowledge resources in bibliographic databases”.

In LIS school five, the course is called *resource description and communication*. The course outline states that this course is aimed at

“Providing students with an understanding of the principles, standards and models needed to facilitate the discoverability of information resources in the range of information systems. It aims to enable students in engaging with the role and implementation of information technology in the knowledge environment and scholarly communication for optimal resource discoverability”.

LIS school five offers knowledge organisation and management as an equivalent to classification. The aim of the course is

“To equip students with an understanding of the principles and foundations of knowledge management in organisation of information with emphasis on subject access in description. It starts with subject analysis and controls the philosophy of aboutness”.

LIS school six provides descriptive cataloguing and subject analysis. According to the course outline,

“Descriptive cataloguing aims to provide students with an understanding of the principles and practice of cataloguing in order to efficiently and effectively apply cataloguing skills in a future workplace”.

In subject analysis, the aim is “to equip students with an understanding of the organisation of information from both theoretical and practical point of view”.

The findings from LIS schools indicate that cataloguing and classification is aimed at providing students with knowledge of the description and organising of information so that users can easily retrieve them.

4.4. Outcomes of the courses offered by the LIS schools

The outcomes of the courses were determined as what the students are supposed to know after completing these courses. The results are discussed in detail in the following subsection.

4.4.1. Outcomes at bachelor's level

LIS school one

LIS school one provides bibliographic control, basic descriptive cataloguing and classification at undergraduate level, in the first year of study, and they anticipate that their students upon completion of this course should be able to discuss the purpose, meaning and history of bibliographic control. They also want students to be able to identify and evaluate different types of bibliographic control tools, to create descriptive cataloguing records and be able to classify information using DDC.

LIS school one further offers descriptive cataloguing in the second year of study and students are expected to demonstrate an understanding of descriptive cataloguing, an understanding of bibliographic control and also be able to compile bibliographic records by interpreting and applying international bibliographic standards set out in the AACR2. Subject analysis is also offered, but its outcomes are similar to the ones of classification offered in the first level of study.

Based on the outcomes of the first and second level of study for cataloguing and classification, this LIS school expects its students to know methods of the organisation of information using DDC and to be able to use the AACR rules for describing information materials.

4.4.1.1. LIS school two

This LIS school offers cataloguing and classification concurrently. LIS School two expects its students to apply DDC and cataloguing rules (AACR and RDA), principles and have acquired knowledge and skills of the practical application of classification (DDC and LCSH) and cataloguing (AACR, RDA and ISBD).

4.4.1.2. LIS school three

Cataloguing

LIS school three also offers basic cataloguing, in which students are expected to understand elements entailed in document analysis, and to be able to identify differences between information retrieval devices available in the library. These students are expected to be aware of various forms of cataloguing available to the librarian and when to use such forms; lastly, they are expected to apply the most general cataloguing rules mostly from AACR2 to all form of printed material.

This LIS school also teaches cataloguing, in the third year of study. Students are expected to demonstrate skills on online searching, for example the South African catalogue (SACat). They are also expected to be able to navigate their way in the cataloguing workflow, be able to use MARC21 to catalogue books and serial publications. When the course is completed, students should also be capable of converting contents into machine readable language through the application of theoretical principles of mechanisation of cataloguing in practice. Lastly, the students should be able to use InMagic as an example of a cataloguing software program to catalogue non-book materials. This LIS school also offers special cataloguing at level four as an elective course for those who wish to be professional cataloguers. The outcomes are similar to cataloguing offered in level three, but the difference is that the content is detailed, especially the practical component.

Classification

This LIS school offers indexing and abstracting separately, which is part of classification in other LIS schools. They offer this course in the second year of study, in the second semester after cataloguing. At the end of this course, students are expected to understand indexing, verbal indexing languages, natural and controlled language, thesauri, to index journal articles, identify key concepts in journal articles and match them against key concepts based on indexing language constructs, preferred or non-preferred terms in a thesaurus for indexing purposes.

In the third year of study, students are expected to have a firm grasp of library classification theory and practice and the uses of classification systems. Students, upon completion of the course in classification, should know the aim and importance of classification in the context of libraries and information centres. Other outcomes of classification are exactly the same as for the classification module that is offered at postgraduate level. However, a slight difference is based on the following outcomes, since the level of conceptual understanding expected of an undergraduate is not the same as at postgraduate level:

- Distinguish between enumerative (including menu-based information retrieval systems)
- Understand macro-thought and micro-thought concepts.
- Investigate the role of classification in the analysis of the thought content of documents

- Critically assess policies and practices of systematic classification, and lastly
- Debate the future of classification and its role in the new information communication languages.

Classification is also offered as an elective in the fourth year of study with more emphasis on the practical aspects of the course.

4.4.1.3. LIS school four Cataloguing

Cataloguing is offered at third year level, in the first semester. Upon completion of this course, students are expected to have acquired knowledge and skills on current cataloguing theories and practices. They are also expected to know cataloguing concepts, practices, current issues and challenges of cataloguing and classification in the library or information centre environment.

Classification

Classification is offered in the second semester of the third year of study. After completing this course, students should be knowledgeable on organising knowledge using DDC and LCC, should understand the theories of knowledge organisation, and apply the knowledge organisation theories in bibliographic description. Students should know the concepts, issues and challenges of classification, be able to classify different information materials, have a knowledge of various classification schemes such as the DDC and LCC schemes and utilise such knowledge in practical classification. Students are also expected to have skills and knowledge of analysing, synthesising and evaluating information materials and, lastly, be able to discuss the challenges of classification.

4.4.2. Outcomes at postgraduate diploma level

4.4.2.1. LIS school one Cataloguing

This LIS school is offers resource description and access to postgraduate students and expects the students to be able to demonstrate an understanding of bibliographic control; they should be able to demonstrate the ability to identify and evaluate different types of bibliographic control tools. Further, students should be able to compile original descriptive catalogues based on database records.

Classification

At the end of this course, students will be able to organise knowledge according to a library classification system, to do subject analysis and classification and to provide subject access to resources.

4.4.2.2. LIS school three Cataloguing

At LIS school three, students are trained to have a working knowledge of document description, the application of RDA and AACR2 cataloguing rules. Students are also expected to assign subject headings to documents using LCSH and classification numbers using DDC. They should be able to use InMagic cataloguing software and build the databases to organise and provide access to collections of cuttings and other materials not provided for in a catalogue.

Classification

Upon completion of this course, it is anticipated that students will be able to understand the main classes of selected classification schemes, notations, history and future developments. Students must be able to evaluate the inadequacies of such classification schemes as propounded by a number of theorists in developing a new classification scheme. This LIS school expects its students to be able to assign notations to different information materials for location in library shelves. Students should also be able to describe the steps involved in building faceted classification schemes, assigning an index, and lastly explaining a post- and pre-coordinated indexing system.

4.4.2.3. LIS school five Cataloguing

The course outline for LIS school five states that they expect students to understand the principles, standards and models used in resource description, creation of bibliographic and other datasets and to be able to manage authority control systems at the end of the course. They also expect them to be able to create and assign metadata for a variety of formats and datasets. This LIS school expects students to become familiar with digital technology including library management and content management systems, so as to be able to select the most appropriate technology in a range of applications and settings.

Students are supposed to be able to create typologies of ICTs in the knowledge environment, particularly in the scholarly communication terrain, and develop skills in their application in a variety of situations and environments upon completion of this course. Students will be able to understand and apply skills required for digital curation and understand the broad concepts of ICTs as they apply to the principles and practices of resource description that support effective scholarly communication.

Classification

This LIS school expects students to understand the role of subject access in resource description including creation and use of subject metadata in Knowledge Organisation Systems (KOS) to support discoverability. This caters for even knowledge of traditional subject analysis and control, through connecting it to contemporary methods of providing subject access to resources. Based on knowledge organisation (classification), this LIS school states that students will be able to use controlled vocabulary systems such as thesauri, subject heading lists and classification schemes. This course outline further mentions that students will attain theoretical understanding of structures for knowledge organisation and representation through taxonomies, ontologies, folksonomies, linked data and the semantic web.

4.4.2.4. LIS school six Cataloguing

LIS school six offers cataloguing at a postgraduate diploma level. This LIS school expects its students to understand the principles and theory of descriptive cataloguing; have a working knowledge of AACR2; the necessary skills to catalogue efficiently and effectively through different types of information materials using AACR2, and to have the ability to do computerised cataloguing using the MARC 21 format; have an introductory understanding of the development, nature and implementation of RDA, and lastly to be able to adapt their cataloguing skills for use in a future library/information centre situation.

Classification

LIS school six offers subject analysis at postgraduate qualification level and their outcomes cover the following and are based on the content that they offer in a period of one year to those who already hold any qualification but are willing to begin their career in the LIS profession.

Upon completion of the course, students are expected to know basic concepts relating to classification. Students are expected to know the importance of classification in the library and information field and to further understand the principles and structure of various general classification schemes with the emphasis on the DDC scheme.

LIS school six anticipates that students should understand principles and theories underpinning subject indexing/cataloguing, with emphasis on the LCSH. Other outcomes include understanding methods for organising and accessing subject information as well as computer-generated systems, understanding the concept of post-coordinate indexing systems *vis a vis* pre-coordinate systems, being aware of using or building up the thesauri and the distinctions between them and subject heading lists as well as being able to evaluate information retrieval systems. In addition to the above, students should demonstrate the practical skills needed to classify materials using the DDC system. Lastly, students should be able to assign subject headings using the LCSH.

These LIS schools that offer a postgraduate diploma in LIS teach cataloguing and classification in such a manner that those who intend to become cataloguers understand the theories and practices of the profession in a year. LIS school one expects its students to understand the principles of traditional cataloguing. LIS school three and six expect their students to be very competitive in the work environment based on organising information materials. This is witnessed by their outcomes as listed above. LIS school five expects its students to understand the organisation of information materials on the web using digital curation skills.

The outcomes of these LIS schools are based on the contents that they offer. Students are expected to have the knowledge of the theories and practices of cataloguing and classification upon completion of these courses. Most LIS schools expect their students to understand descriptive cataloguing and to know how to use AACR2 and RDA after they have completed their cataloguing course. Further, students are expected to understand classification, to be able to organise information materials with DDC and to be able to assign subject heading using LCSH. One LIS school offers contents that are more ICT-based compared to other LIS schools.

4.5. Curricula offered in the courses

Course outlines were analysed using themes which are purposes, contents and outcomes (see Appendix B) on what is taught by LIS schools in cataloguing and classification courses. The curricula are presented in detail in the following subsections.

4.5.1. Cataloguing and classification curricula offered at bachelor's level in Library and Information Science and the of Information Science

This section presents the results of the curricula offered within a bachelor's degree. The results are presented according to the schools.

The curriculum for LIS school one is structured as follows:

- The aim, meaning and history of bibliographic control are discussed based on cooperative bibliographic activities in South Africa. The difference in the three meanings of “bibliography” is explained.
- The course presents the distinction between various kinds of bibliographic tools such as the library catalogue, a union catalogue, national bibliographies, ndexing and abstracting journals as well as selecting finding aids and Internet resource guides.
- The evaluation of the bibliographic control tools using an appropriate criterion.
- Application of the international standards set out by the AACR2.

LIS school one's classification contents offered in the first year of study include topics that cover:

- Classification
- Subject headings specifically LCSH
- Relating classification to other methods of subject analysis.
- Analysing a resource to determine its subject.
- Classifying resources according to the *DDC* system (22nd edition).
- Understanding the need for subject organisation and relating these needs to a specific institution.
- Successfully applying subject organisation skills (classification, abstracting, assigning subject headings and indexing)
- Evaluating the different subject organisation tools
- Classification procedure through the use of DDC system.

LIS school one's contents of descriptive cataloguing offered:

- Discussing the meaning and the purpose of descriptive cataloguing
- Discussing the meaning and the purpose of the ISBD.
- Discussion of problems experienced when cataloguing
- Tracing the purpose, meaning and history of bibliographic control and discussing the role of standards and rules in bibliographic control.
- Indication of the connection between bibliographic control, resource sharing and document delivery
- Explanation of cooperative bibliographic activities and identification and the explanation of the developments based on the online bibliographic control and the automation of cataloguing
- Tracing the developments from AACR to RDA with reference to FRBR conceptual model and technically reading the item to be catalogued in order to identify elements necessary for descriptive cataloguing
- Practical application of AACR2 and providing access points according to AACR
- Utilising standards to build descriptions which conform to the ISBD format for material being catalogued.

LIS school two's curriculum for cataloguing and classification has the following topics:

- Introduction to tools classifying with DDC
- Introduction to AACR2, RDA, and ISBD & MARC
- Classifying with DDC which includes determining the subject and disciplinary focus
- Form (if applicable) bibliographic description which is mainly about drawing up the statement of responsibility and the edition statement.
- Bibliographic description mainly publication or distribution statement
- Number building and number adding through the use of DDC.

LIS school three offers the following topics:

- Clarification of key concepts and the purpose and functions of the library catalogue
- Comparison of retrieval devices
- Evaluation of the library catalogue
- The physical forms of the library catalogue and its inner forms
- Limited cataloguing and the policies of the library catalogue.

In the third year of study this LIS school offers indexing and thesaurus construction; computerised cataloguing and basic classification. Indexing and thesaurus construction contents are as follows:

- Introduction to verbal indexing languages
- Principles of indexing
- Semantic and synthetic relationships in indexing
- Stages in indexing
- Elements of thesaurus design
- Recall and precision devices
- Guidelines for thesaurus construction

Computerised cataloguing contents:

- Mechanisation of cataloguing
- History of MARC
- Catalogue use studies
- Online Public Access Catalogue (OPAC)
- Organisation of the cataloguing department
- Practical use of MARC21 and InMagic.

Basic classification contents:

- An introduction to the theory of classification
- Natural and artificial classification
- Rules of division
- Introduction to classification systems
- Components of DDC edition 20

At the fourth year of the bachelor's degree in LIS this school offers special cataloguing and advanced classification as elective courses for those who wish to specialise in cataloguing and classification in the library. Specialised cataloguing contents are as follows:

- Historical overview of the most important cataloguing codes
- Special cataloguing
- Re-cataloguing
- Centralised and co-operative cataloguing
- Practical use of AACR2 to catalogue non-book material,
- Practical use of MARC21 for non-book tags
- Practical use of InMagic.

Advanced classification contents are listed below:

- General classification schemes
- The construction of faceted classification
- Depth classification
- Classification policies
- Practices and limitations
- The future of classification.

LIS school four offers cataloguing and classification in the third year of study in a four year LIS degree. Cataloguing is offered in the first semester and classification in the second semester. The following are the contents offered in the cataloguing course of this LIS school and followed by the classification content:

- Discussing theoretical concepts in cataloguing
- Teaching cataloguing practices and tools
- Development of a cataloguing plan or strategy for a small information centre, for instance a school library.
- Teaching the applications of ISBD and AACR2
- Theoretical knowledge of MARC21 format for bibliographic description
- Examining Dublin Core and metadata relationships to cataloguing
- Discussing current trends and challenges of cataloguing in South Africa
- Defining the terms catalogue and catalogue entry
- Describing access points of catalogue entries and identifying main and added entries
- Providing a description of physical forms of the catalogue, and lastly
- Describing the functions of a catalogue.

Classification content:

- Analysis, synthesis and evaluation of information
- Importance and role of the classification of information documents in a library environment
- Application of the concepts and the understanding of the history of classification and the evaluation of classification schemes.
- Analysis and critical discussion of the nature and level of application of either DDC or Library of Congress classification (LCC) in a particular library or information centre

- Analysis and critical discussion of the structure of subject analysis tools, specifically LCSH
- Discussion of current trends and challenges of classification

4.5.2. Cataloguing and classification curricula in a postgraduate diploma in Library and Information Science

LIS school one's cataloguing and classification content at this level includes the following topics:

- Bibliographic control orientation
- Concepts of bibliographic control
- Tools for bibliographic control
- Online-based bibliographic control
- Descriptive cataloguing
- Providing access points
- Classification, and
- Subject headings.

LIS school three's cataloguing curriculum includes the following:

- Key cataloguing concepts
- The purposes and functions of the library catalogue
- Comparison of retrieval devices
- Evaluation of the library catalogue
- Physical forms and inner forms of the library catalogue
- Limited cataloguing and cataloguing policy;
- Authority files and analytical cataloguing ;
- Organisation of the cataloguing department;
- Original cataloguing versus copy cataloguing;
- Practical application of AACR2, RDA, MARC21, and metadata;

LIS school three's classification content has the following topics:

- Classification schemes;
- The construction of faceted classification and depth classification;

- Classification policies, practices and limitations;
- Future of classification;
- Indexing;
- Controlled vocabularies, and
- Syntactical and semantic relationships in indexing.

LIS school five offers the following topic in cataloguing:

- Bibliographic and authority control;
- Principles, standards and models in the creation and organisation of bibliographic datasets;
- Metadata for a variety of formats including in large datasets;
- Applications of digital technologies relevant to the principles and practices of information transfer and scholarly communication;
- Digital curation (digital collection, construction and preservation);
- Scholarly communication and its universal access and
- Resource description in repositories.

LIS school five's classification content comprises the following topics:

- Abstracting and indexing;
- Control vocabularies which include thesauri, subject heading lists and classification;
- Structures for knowledge organisation and representation, which include taxonomy, ontology, folksonomy, topic maps, linked data and the semantic web;
- Knowledge management: principles, practices and theory;
- Web content management;
- Communication of practice and indigenous knowledge;
- Learning organisation;
- Competitive intelligence; and
- Knowledge mobilisation combined with knowledge brokering.

LIS school six's cataloguing curriculum has the following topics:

- Development of catalogues and cataloguing codes,
- Cataloguing principles
- Centralised and co-operative cataloguing,
- Computerised cataloguing networks,

- Practical application of AACR2,
- Cataloguing online utilising MARC21 format,
- Learning SABINET online.

LIS school six's classification content includes:

- Classification theories, principles and forms of classification schemes, mainly faceted and enumerative ones
- Subject analysis and controlled vocabulary
- The structure and principles of DDC scheme
- The structure and principles of the LCSH
- Practical application of classification using DDC and subject indexing using LCSH
- Computer-based indexing systems
- Pre-coordinated versus post-coordinated indexing
- Application of controlled vocabulary in indexing, mainly thesauri in indexing, and lastly
- Evaluation of information retrieval systems.

All the above-mentioned LIS schools offer cataloguing and classification at postgraduate diploma level for a one-year period. Cataloguing is offered in the first semester while classification is offered in the second semester. LIS school five has contents that cater for the organisation of information materials from the World Wide Web (digital curation) and traditional cataloguing as well. However, LIS school one (cataloguing and classification) offers these courses as year courses with both cataloguing and classification taught concurrently. LIS school one's curriculum mainly introduces cataloguing and classification tools and other important components of these courses. LIS schools six and three teach most of the important components of cataloguing and classification; for instance, tools involved in cataloguing and classification, the history and purpose of cataloguing, etc. LIS school five offers more technocentric contents based on cataloguing and classification.

Both cataloguing and classification education for all LIS schools is divided into two parts; namely the practical and theoretical sections. The practical education incorporates all the concepts learnt in class. Specifically, one LIS school insists that 80 hours' practical classes are attended by its students.

The findings from all LIS schools including those that teach cataloguing and classification at bachelor's degree or postgraduate diploma level in LIS is that they have a common aim which is based on the arrangement of information material to facilitate its findability or discoverability in an information centre. Their outcomes are in line with the contents offered by these LIS schools. For instance, all LIS schools teach AACR2 and their outcome is that students must understand the organisation of information materials using AACR2. All LIS schools that have submitted their course outlines share similar topics, except LIS school five, that offers these courses in a technocentric approach which is mainly focused on organising and retrieving information on the Internet.

4.6. Cataloguing and classification job advertisements

Cataloguing and classification job advertisements taken from *Sunday Times and Mail & Guardian* newspapers and from LIASA were analysed. Four job advertisements were retrieved from *Sunday Times and Mail & Guardian* (for the period 2013-2015) and six from LIASA listserv. Job advertisements were also requested from LIASA for the year 2016.

The results are presented in the following sections. First the sectors of the economy where these jobs are advertised, followed by the educational requirements of the jobs, then the experience required, the skills, knowledge and attitudes required, and lastly the duties and responsibilities of cataloguers.

4.6.1. Sectors advertising the jobs

Four of these job advertisements were from academic libraries and six from public libraries.

4.6.2. Educational requirements

One job advertisement required a postgraduate diploma in Library and Information Science plus a Baccalaureus Bibliothecologiae (B.BIBL) or BLIS in academic library. Five public libraries required a B. BIBL degree or a BLIS degree. Only one cataloguing job advertisement required a National Diploma in LIS alone. Table 3 shows the results:

Table 3: Educational requirements

Job advertisements and job title	Qualifications	Sector
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Advert 1: Cataloguer	Bachelor's degree in LIS and a postgraduate diploma in LIS	Academic library
Advert 2 : Cataloguer	B.BIBL. or BTECH in LIS or equivalent.	Academic library
Advert3: Assistant metadata librarian	Bachelor's degree in LIS or a national diploma	Academic library
Advert 4: Content Curator/Corporate Librarian (cataloguing digital information)	Four year degree preferred in library science or related field	Academic library
Advert 5: Librarian- cataloguing section	B. BIBL or equivalent LIS degree	Public library
Advert 6: Intern (cataloguer)	B. BIBL or equivalent 3/4 year LIS qualification	Public library
Advert 7: Librarian/ Cataloguer	National diploma in Library and Information Science or a bachelor's degree in LIS would be an advantage	Public library
Advert 8: Librarian-cataloguing	BLIS or B.BIBL	Public library
Advert 9: Cataloguer	BLIS or postgraduate diploma in LIS	Public library
Advert 10: Cataloguing librarian	BLIS/B.BIBL	Public library

All job advertisements from academic libraries required a minimum of a diploma or bachelor's degree in LIS for cataloguing positions. One of them required a four-year degree and a post graduate diploma in LIS. In public libraries; the minimum requirement is a diploma.

4.6.3. Experience required in cataloguing job advertisements

Two of the advertisements from academic libraries require three years of experience or more. Two advertisements from academic libraries specify that a candidate must have four-year post experience as a cataloguer or in a library environment to qualify for the job advertised.

Public libraries require a minimum of two years' experience in a library environment. Table 4 shows the results.

Table 4: Required experience

Job advertisements and job title	Experience required	Sector
Advert 1: Cataloguer	3-4 years	Academic library
Advert 2 : Cataloguer	3-4 years	Academic library
Advert3: Assistant metadata librarian	Minimum of 4 years	Academic library
Advert 4: Content Curator/Corporate Librarian	Minimum of 4 years	Academic library
Advert 5: Librarian- cataloguing section	2 years' experience in the library environment	Public library
Advert 6: Intern (cataloguer)	No experience just a qualification	Public library
Advert 7: Librarian/ Cataloguer	2 years	Public library
Advert 8: Librarian-cataloguing	2 years	Public library
Advert 9: Cataloguer	3 years' experience	Public library
Advert 10: Cataloguing librarian	4 years' experience	Public library

4.6.4. Knowledge, skills and attitudes or personal attributes required

The question on the knowledge, skills and attitudes required from cataloguing candidates was asked to find out what knowledge, skills and attitudes are required from a cataloguer.

The results revealed that there are various skills, knowledge and attitudes required by the employer. The skills are arranged according to advertisements from one to ten. The first four advertisements are from academic libraries and advertisements six to ten are from public libraries. Table 4 below presents the results:

Table 5: Required skills, knowledge and attitudes

Job advertisements	Skills required	Knowledge	Aptitudes/personal attributes
Advert 1: Cataloguer	<ul style="list-style-type: none"> Basic and advanced computers skills (MS Office Suite, e-mails and Internet usage), Good communication skills 	<ul style="list-style-type: none"> Knowledge of cataloguing tools namely for example DDC and AACR2 or RDA USMARC and LCSH. General 	<ul style="list-style-type: none"> Client oriented and customer focused Self-driven Display of initiative Attention to

	<ul style="list-style-type: none"> • drivers' licence code 8/10 	<p>knowledge would be an advantage.</p> <ul style="list-style-type: none"> • Knowledge of OCLC and SA catalogue. 	<p>details.</p>
Advert 2 : Cataloguer	<ul style="list-style-type: none"> • Basic computer skills, • Written and verbal communication skills, • Good interpersonal skills and • Be able to work in a team and independently. 	<ul style="list-style-type: none"> • Knowledge of online cataloguing tools for instance WebDewey, Cataloguers Desktop, Web class and OCLC's Bibliographic formats standards, know DDC, RDA and LCSH 	<ul style="list-style-type: none"> • Time management, • Honesty and integrity, • Highly motivated, • Sense of urgency and • The ability to develop self and others
Advert3: Assistant metadata librarian	<ul style="list-style-type: none"> • Ability to work under pressure and meet strict deadlines, • Basic and advanced computer skills, 	<ul style="list-style-type: none"> • Knowledge of AACR2, DDC and LCSH and • Good sense of general knowledge 	<ul style="list-style-type: none"> • Requires a high level of self-confidence, • Self-discipline, • Assertiveness and time management, • Stress management
Advert 4: Content Curator/Corporate Librarian	<ul style="list-style-type: none"> • Good organisational skills; • Multitasking skill, • Basic and advance computer skills (MS Office Suite, emails and Internet usage), • Good communication skills. 	<ul style="list-style-type: none"> • Experience with taxonomy, • Metadata and tagging for digital content management, • Robust digital content experience, • Mastery of interactivity and the Web. • Familiarity with common social platforms 	<ul style="list-style-type: none"> • Provide good judgements, • Ability to assess the situation and • Give relevant advice, • Capability to adapt and work in a team. • Being analytic
Advert 5: Librarian-cataloguing section	<ul style="list-style-type: none"> • Mediate computer skills, • Communication and peoples' skills in 	<ul style="list-style-type: none"> • Knowledge of AACR2, RDA, DDC and LCSH. • Know your 	

	<p>local and communication language,</p> <ul style="list-style-type: none"> • Drivers' licence code 10, • Ability to meet deadlines and work under pressure. 	<p>MARC21, InMagic genie as cataloguing software,</p> <ul style="list-style-type: none"> • Know other databases e.g. SLiMS and OCLC. • Knowledge WebDewey and Web class 	
Advert 6: Intern (cataloguer)	<ul style="list-style-type: none"> • Mediate computer skills (MS Office Suite), • A drivers' license (code 8/10), • Good interpersonal skills, and work ethics. 	<ul style="list-style-type: none"> • Know AACR2 or RDA, DDC and • Be familiar with LCSH and be willing to learn more 	
Advert 7: Librarian/Cataloguer	<ul style="list-style-type: none"> • Good computer skills for Internet and MS Suit usage, • Good communication skills, • Driver's license code 8/10. 	<ul style="list-style-type: none"> • Knowledge of legal deposits, • Knowledge of Millennium system, • Knowledge of GroupWise email, • Knowledge of Z39.50 and Unicorn. • Knowledge of AACR2 and RDA, • knowledge of LCSH and DDC. 	<ul style="list-style-type: none"> • Being self-driven, • Self-confident and self-disciplined, • Assertiveness and time management, • Paying attention to details and sounddecision making
Advert 8: Librarian-cataloguing	<ul style="list-style-type: none"> • Mediate computer skills, • Interpersonal skills, • Communication skills preferable in IsiXhosa and English and 	<ul style="list-style-type: none"> • Knowledge of AACR2, RDA, DDC and LCSH. • Knowledge of OPAC library system, South African catalogue (SACat) and World cat 	<ul style="list-style-type: none"> • Sense of urgency and the ability to develop self and others, • Display of initiative, • Client oriented and customer focus • Be able to work under pressure and meet deadlines
Advert 9: Cataloguer	<ul style="list-style-type: none"> • Computer skills (MS Suite), 	<ul style="list-style-type: none"> • Knowledge of cataloguing tools 	<ul style="list-style-type: none"> • Client oriented and customer

	<ul style="list-style-type: none"> • Drivers' license code 8/10, • Communication skills both written and verbal. 	e.g. AACR2, DDC and LCSH. Online cataloguing systems e.g. WebDewey or Web Class. <ul style="list-style-type: none"> • Knowledge of cataloguing databases e.g. SLIMS, OCLC connexion and InMagic 	focus, <ul style="list-style-type: none"> • Pay attention to details, • Time management and of self-confidence and self-discipline
Advert 10: Cataloguing librarian	<ul style="list-style-type: none"> • Excellent computer literacy, • Excellent communication & people skills, • Good organisation skills and • Drivers' licence 	<ul style="list-style-type: none"> • Knowledge of RDA, LCSH and DDC. • Knowledge of GroupWise email, Internet, and Windows applications, • Knowledge of WebDewey and Web class. Smart port Z39 	

The results indicate that the skills required by employers are basic and advanced computer skills; communication (verbal and written), interpersonal, organisation, people-centred and; multitasking skills.

Based on the knowledge required, these advertisements indicated the following: knowledge of cataloguing tools, namely DDC, AACR2, RDA, USMARC and LCSH; knowledge of WebDewey and Web Class and Smart Port Z39; knowledge of cataloguing software for example SLIMS, OCLC Connexion and InMagic; knowledge of OPAC library system, South African catalogue (SAcat) and World catalogue; knowledge of Millennium system, knowledge of GroupWise email and; knowledge of legal deposits. Further, one advertisement required experience in taxonomy; metadata and tagging for digital content management; robust digital content experience; mastery of interactivity and the Web and lastly, familiarity with common social platforms.

Attitudes required by these advertisements include: a client oriented and customer focus, self-drive, display of initiative, paying attention to detail, honesty and integrity, time management, good judgement and being able to assess the situation and offer sound advice.

In addition, these advertisements indicated that candidate must be analytic, be highly motivated and have a sense of urgency; lastly be able to work in a team and also independently.

4.6.5. Job descriptions or duties of a cataloguer

The results from ten advertisements have the following duties and responsibilities that applicants must perform.

Advertisement one

- The incumbent will be responsible for the cataloguing and classification of library material using DDC23, AACR2, USMARC and LCSH.
- The candidate will also do original cataloguing on the WorldCat.

Advertisement two

- Collection development, management and evaluation;
- User education and training,
- Liaison with staff and students,
- Placing book / periodicals order for the faculty,
- Determining all information needs of the faculty,
- Information retrieval from Sabinet-linked databases, EBSCOHOST, Science Direct and all other library databases and cataloguing and classification.
- The incumbents in the academic library also need to do original cataloguing on the World Cat.
- Ensure quality control.

Advertisement three

- Loans and circulation control;
- Journal administration;
- Cataloguing and classification;
- Information desk management;
- Conference administration;
- General office administration;
- Shelf-reading, filing and organising of library materials;
- Capturing records in institutional repository;

- Provision of library and information services and
- Tasks relating to conference services.

Advertisement four

- Information architecture,
- User journeys,
- Usability of the site experience;
- Workflows for content publishing;
- Content types;
- Formats and structures;
- Providing direction, guidelines, specifications and examples that will facilitate the flow of production-ready content for digital content publishing;
- Developing recommendations and solutions that address client content problems, from content creation to the platforms where it is distributed and consumed;
- Recommending processes for delivering effective content on the scale and at the cadence required by the business.

Advertisement five

- Incumbents are responsible for information retrieval from Sabinet-linked databases, EBSCOHOST, Science Direct and all other library databases and;
- Cataloguing and classifying using AACR2 and RDA toolkit, and through using Web class (LCSH), Web Dewey. These materials include books, AVs and other information materials.

Advertisement six

- Perform cataloguing and classification of library materials;
- Maintain the integrity of the catalogue;
- Provide professional guidance to community libraries and;
- Liaise with stakeholders

Advertisement seven

- Responsibility for cataloguing SANB legal deposit material on OCLC's Worldcat and III's Millennium software applications

- Responsible for the creation of accurate bibliographic records and item records of monographs, maps, integrating resources, government publications continuing resources, CD's, DVD's kits and electronic publications
- Familiarity with cataloguing software, for example Cataloguer's Desktop, Web Dewey, Web Class and RDA toolkit.
- Using the SANB cataloguing manual (Catman) to catalogue library materials
- Participation in the quality control and maintenance of SANB records on both OCLC and Millennium databases.
- Maintaining accurate monthly statistics on every item or material that has been catalogued.
- Keeping abreast of international cataloguing trends and practices via research and lifelong learning, including self-study and attendance of relevant workshops, seminars, etc.

Advertisement eight

- Performs cataloguing and classification of library materials
- Provides professional guidance to community libraries,
- Liaises with stakeholders;
- Is responsible for the creation of accurate bibliographic records and item records of monographs and;
- Maintains accurate monthly statistics on every item or material that has been catalogued.

Advertisement nine

- Administration of library operations. Library collection management. Management of Bibliographic control work
- . Cataloguing material according to AACR2. Marketing and promotion of library services.
- Outreach programme coordination and implementation. Customer relations. Stakeholder relations.
- Planning, leadership, controlling and organising. Effective and efficient supervision of subordinates.
- Adherence to corporate governance within the section.

- Human resource management. Financial management.
- Continuous improvement on service delivery. Knowledge.

Advertisement ten

- Candidates are responsible for the development of the library catalogue using Unicorn (online system to make the catalogue accessible on the worldwide web)
- Enforce application of international standards AAC2, MARC21, and Z39.50
- Check and control each publication before determining the subject coverage of the work to allocate subjects headings, work on SABINET using SAcad and the World cat
- Find bibliographic records through the use of other library catalogues,
- Use smart port (i.e. Z39.50) to export records
- Adhere to in-house cataloguing standards, rocedures and work flows.

The core functions of cataloguers are to catalogue and classify. The results from academic library advertisements reveal that academic cataloguers are supposed to perform information retrieval from Sabinet-linked databases, EBSCOHOST, Science Direct and all other library databases and cataloguing and classifying using AACR2 and RDA toolkit, and through using Web class (LCSH) and Web Dewey (DDC). These materials include theses, books, Audio Visuals (AVs), and other academic materials. The incumbents in the academic library also have to do original cataloguing on the World Cat. One advertisement revealed that a cataloguer has to perform authority checks.

The results from cataloguing job advertisements showed the following duties of the public cataloguer: administration of the library collection, library collection management, management of bibliographic control work, and cataloguing library materials according to AACR2 or RDA. They are also responsible for classifying library materials using DDC 23 and assigning subject headings using LCSH. One job advertisement articulates that it is also a core competence of the cataloguer to enforce applications of international standards, for instance AACR2, MARC21, and Z39.50, and also to check and control publications before providing the subject coverage. Other advertisements from the public domain state that cataloguers are also responsible for working on SABINET using SAcad and WorldCat, finding or downloading bibliographic records through the use of other library catalogues (mainly OCLC), using smart port (Z39.50) to export records and lastly, adhering to in-house cataloguing standards, procedures and work flows.

4.7. Summary

The findings from LIS schools' course outlines showed that the aims of cataloguing and classification are equipping students with relevant knowledge and skills of cataloguing and classification. These purposes include providing students with knowledge of organising information materials so that they can be easily retrieved by users. The common goal of LIS schools in providing cataloguing and classification is to help those who are about to begin their careers in LIS to be able to organise information in the library environment. These LIS schools' course outlines indicated that LIS schools aim at ensuring that all bibliographic workers have knowledge of cataloguing and classification.. This knowledge and these skills include allocating access points, performing subject analysis and providing the class number of the item. Their outcomes are in line with the aims and contents that are offered by each LIS school. The curricula of each of these LIS schools are almost the same, since the ground covered should be similar. However, as the qualifications grow the level of conceptual focus becomes more demanding. The content included history of the most important cataloguing codes (AACR2 and RDA); cataloguing principles; computerised cataloguing using MARC format; learning SABINET online; digital curation (digital collection, construction and preservation); metadata for a variety of formats including large datasets; application of relevant technologies in cataloguing; resource description in repositories; scholarly communication and its universal access; descriptive cataloguing; providing access points; comparison of retrieval devices; practical application of AACR2, RDA, MARC21, metadata; InMagic as cataloguing software; understanding; application of ISBD in bibliographic description and tracing the differences from AACR2 to RDA.

Findings from job advertisements indicate that LIS qualifications are required from candidates, coupled with some years of experience. Skills that are required include computer skills, communication skills and people skills. Knowledge of the two most widely used tools in South Africa, namely AACR2 and RDA, is required. Further, , knowledge of DDC, LCSH, OCLC connexion, MARC21, Z39, Millennium system, and SLiMS system is another vital requirement for cataloguers.

The next chapter is a continuation of data presentation and analysis. Interview results conducted with professional cataloguers from both academic and public libraries are given.

CHAPTER 5:CONTINUATION OF DATA ANALYSIS AND PRESENTATION OF FINDINGS FROM INTERVIEWS

5.1. Introduction

This chapter presents the findings of the study from interviews with cataloguers. Interviews were conducted with 18 professional cataloguers employed in public and academic libraries. These cataloguers are denoted as cataloguer one to cataloguer eighteen.

5.2. Daily duties of cataloguers

The question was intended to discover the daily tasks/duties of cataloguers so as to get a picture of what they do and the tools they use in their daily tasks. When asked what they do on a daily basis, their responses were as follows:

Cataloguer 1 (supervisor) stated:

“I attend to managerial functions first as I am the head of department (HOD) of the cataloguing department., I check emails, prepare for meetings. However, if there is no urgent matter, I attend to my cataloguing, where I focus on theses from all university campuses after graduation. I also catalogue books.”

Cataloguer 2 (supervisor) said:

“I check the leave book, sign forms, and get through the administration work since I am a supervisor. Then it depends what I am working on, usually I find the batch of materials that need to be done. I regularly check the database and add what needs to be added. I catalogue Audio Visual materials (AVs) with my other colleague. I also do normal materials.”

Cataloguer 3 (supervisor) mentioned:

“I manage the staff. I catalogue all the legal deposit publications; only the serial or periodical publications. I do not catalogue monographs. I use the Millennium system. We are in a consortium with other five legal deposit sections in the country. I also catalogue old digitised newspapers, dating from 1800 to late 1900”.

Supervisors of the cataloguing section are responsible for the management of the staff and procedures of the section. They perform cataloguing and classification of library materials and perform quality control.

Cataloguer 4 reported:

“I check my emails. I keep records of what I do, so I update those records. I tend to specialise in children’s’ non- fiction. It just the way things are. When I started, I would spend my overtime on it. I select the books and create the order. I start downloading books from smart port and check whether the class number is valid and correct. That is what I spend most of my time on.”

Cataloguer 5 said:

“I do receiving and adding of library materials. I catalogue non-fiction. I do original cataloguing and add-on or copy cataloguing. If I have time I do authority file maintenance.”

Cataloguer 6 stated:

“I do cataloguing; I catalogue new books from scratch; sometimes I also do add-ons. I use different tools, [I] use LCSH for subject headings, use DDC. I use it for number building, I also referred to other databases like OCLC and City of Cape Town SLiMS to see how they catalogue their materials but that one is only for reference purposes”

Cataloguer 7 said:

“I do copy cataloguing and original cataloguing, because I am cataloguing reference books. I do help sometimes if I don’t have anything to do. I am using the Millennium system for reference because they go to the Legal Deposit. For our newly purchased books I use SLiMS system.”

Cataloguer 8 said:

“I do sorting of books, ordering of the books, receiving the books and lastly cataloguing. I catalogue non-fiction books”

Cataloguer 9 indicated:

“It depends, like at the moment we are busy receiving the materials, the librarian on acquisition will give us books then we will receive them, but it depends on the amount of books. If they are many I would receive for the whole day but if they are few I will split my day between cataloguing and receiving.”

Cataloguer 10 said:

“Normally as a cataloguer I do cataloguing, non-fiction books, reference books, AV, Don African books (South African collection), meaning we arrange the item using DDC numbers to ensure that they are easily retrieved by users of periodicals (magazines).”

Cataloguer 11 said:

“I am in the legal deposit part, so I do legal deposit material which comprises print and non-print materials, CD-Rom fiction and non-fiction. Everything that is published in SA. I am also doing government publications as well.”

Cataloguer 12:

“Oh jah into esiyenzayo la angith incwadi suke seyisuka laphaya e-acquisition department bese siyi catalogue ke thina, leyo item engiyiphethe by that time, kuba yi fiction noma i-non-fiction.”

[I do cataloguing of books, both fiction and non-fiction books depending on what I have on hand by that time.]

Cataloguer 13 said:

“As soon as I get in I’ve got to log in and check my emails. Then I start cataloguing; I do original cataloguing of non-fiction, we do not do fiction. Most of our books are downloads from OCLC, so I check whether the labels are correct; I double check whether the class number is correct. Remember when it comes to call numbers we use DDC.”

Cataloguer 14 said:

“I start working at 7:30. Either I catalogue non-fiction books or theses. Theses are not on OCLC so I do original cataloguing/ With the books on the system we do copy cataloguing, except for the ones published in South Africa or India: they are not on the system so I

catalogue them originally. However, I love doing theses since they are always done originally and also the fact that I have to assign class numbers and authorise the authors.”

Cataloguer 15 said:

“I start a day by receiving new books from a colleague. I do quality control on the materials that my colleague has catalogued. I check whether the class number or subject heading is correct. Thereafter I pack the books and send them off for processing. I also create a record for theses in the institutional repository through creating PDF that will be used as an e-version”

Cataloguer 16 stated:

“Well it depends.. Some days I get boxes from acquisitions, and then I have to check if the order corresponds with the invoice, then I check which campus the books are from. When I am done with the checking process I get to my cataloguing.”

Cataloguer 17 said:

“When I get in, in the morning I get straight to my cataloguing I catalogue different kinds of materials mostly, print, so we catalogue, books, periodicals and thesis”

Cataloguer 18 stated:

“We each have our own section; I do Arts and Education, so it is basically all new materials that come in. It depends on the days, but I do retrospective cataloguing, I do original cataloguing and I sometimes download records from OCLC and modify the record to meet our local needs.”

Though cataloguers were from both academic libraries and cataloguing centres for public libraries, cataloguers have some similar duties. However, there are some distinct factors, the major one being their day-to-day experience. Cataloguers from academic libraries tend to focus on cataloguing materials that are more educational, research oriented and subject oriented. The most on their day-to-day experience as cataloguers. Cataloguers from public cataloguing centres catalogue materials, which are fiction and non-fiction, either electronic or hard copies.

5.3. Years of experience as a cataloguer

The cataloguers' experiences vary. Table 6 illustrates their experience.

Table 6: Cataloguers' experience

Periods	Number of cataloguers
5 years	7
6 - 10 years	3
11 - 15 years	1
16 - 20 years	3
21 - 25 years	3
30-40 years	1

The results indicate that most cataloguers have up to five years of cataloguing experience, followed by those with six to ten, sixteen to twenty and twenty-one to twenty-five years. The figures indicate that, generally, the cataloguers are well experienced.

5.4. Qualifications

Cataloguers were also asked to indicate their educational qualifications. This was done to determine the minimum educational requirements set and compare them to the job requirements from newspaper advertisements. The results are shown in Table 7.

Table 7: Cataloguers' qualifications

Qualifications	Respondents
Diploma in LIS	7 (one has a diploma only and did not further her studies to a B.Tech)
Bachelor's degree (B.Bibl or BLIS or B.Tech)	6 hold a B.Tech and 8 hold a BLIS or B.Bibl
Post-graduate diploma in LIS	6 these cataloguers also have a postgraduate diploma
Honours in LIS	5 already have the qualification
Masters in LIS	None

The results indicate that most cataloguers have a minimum qualification of a diploma in LIS, followed by those with a 'bachelors degree or a bachelor of technology degree, those with a

postgraduate diploma and lastly those with an honours degree. It is disappointing to see that no cataloguer holds a masters or Ph'D.

5.5. Tools used for cataloguing and classification

The following section presents the tools used by cataloguers in general. Cataloguers who catalogue legal deposit materials use the Millennium system, which is a consortium of five legal deposit stations in South Africa. They also use DDC23 for assigning class numbers, AACR2 corporate with some features of RDA guidelines, and LCSH for assigning subject headings. One of the cataloguers (Cataloguer 11) stated that:

“I use DDC edition 23, AACR2 and RDA, depending on the downloaded record, but originally we are using RDA, and Millennium system (about to be phased out) is used as our coding convention, LCSH is used to assign subject headings.”

Those who are cataloguing general collection for municipal libraries are using the very same tools, but the difference is that their library systems is called SLiMS and it is used mostly in public libraries.

Cataloguer 2 stated that:

“I use DDC both online and hardly any hard copy, LCSH online version, SLiMS system, part of RDA but mainly AACR2 for downloads I, use OCLC connexions.”

Cataloguers working in academic libraries have similar tools.

Cataloguer 14 said that:

“We use RDA toolkit, DDC23 or Web Dewey, Web Classification or Classification Web (LCSH) and our in house based classification for the needs of our community that we serve”

Cataloguer 17 disclosed:

“We are using RDA tool kit, DDC the 22 and the 23 edition we also subscribe to LC class web we do not subscribe to web Dewey, I find LC class very helpful because you can search, lets say I am doing my thesis I can search my key words on OCLC and then go to LC class to verify whether the subject is authorised, and OCLC is connected to LC web and it easy to do it. It is also easy to correlate your subject heading with the Dewey number and we use SirsiDynix as our Integrated Library System (ILS).”

Tools used for cataloguing are almost the same for both academic libraries and cataloguing centres for public libraries; however, this depends on a particular cataloguing centres choice of which tools they prefer. These tools range from:

- DDC22 or DDC23 or Web Dewey for class numbers: both public and academic libraries' cataloguers stated that they use DDC either online or hard copy versions to classify and provide class numbers for library materials. Cataloguer 13 said, *"It is easy to co-relate your subject heading with the Dewey number when classifying using Web Dewey."*
- LCSH or SEARs or Web Classification List of Subject headings. All the cataloguers use web classification to assign subject headings for library collections.
- MARC21- MARC tags are used to code or describe the bibliographic information in online databases, for instance OCLC connexion, SLiMS or InMagic.
- SLiMS is an online system used mainly in public libraries to perform all the library functions, be it cataloguing, circulation, acquisition, and other library functions.
- SirsiDynix . This software has many library courses within it, for instance circulation, acquisition, cataloguing, and other functions.
- Millennium system- this is software used by all five South African legal deposits to code all South African published information material.
- AACR2. Most respondents, mainly from cataloguing centres for public libraries, are still using AACR as their cataloguing standards. However, they use a little bit of RDA. Cataloguer 10 said: *"We are still using AACR2. However, due to the huge number of downloaded records we also use part of RDA"*. No academic library still uses AACR2; they have all migrated to RDA but they stipulate that AACR knowledge is still important. Cataloguer 16 said: *"We mainly use RDA but AACR knowledge is still important so that I can be able to spot the difference between the two cataloguing standards."*
- RDA. Most cataloguing centres, whether a cataloguing centre for public libraries or academic libraries, use RDA as their coding convention. All cataloguing centres for public libraries use part of RDA as a coding convention, but they mainly use AACR because they do not have the tool kit; they use manuals from RDA workshops and supervisor notes. Cataloguer 8 said: *"We use AACR2 but due to the many bibliographic records from OCLC, we find ourselves compelled to use RDA, for*

which we do not have the tool kit.” All academic libraries have implemented RDA in their cataloguing departments.

- OCLC Connexion is used by all public library cataloguing centres. Cataloguer 6 stated: *“I use OCLC and City of Cape Town to check and download records.”* Cataloguers from academic libraries reported that they use OCLC to search, create and import bibliographic records. Cataloguer 1 said: *“It depends whether a book is available on OCLC or not; if it is available then I have to download the bibliographic record and modify it to suit the needs of our own catalogue.”*

5.6. Sufficiency of the qualification for cataloguing jobs

This question was asked to determine the cataloguers’ perceptions about the sufficiency of the cataloguing and classification curricula for their work; that is, if what they have learned at school is relevant to their jobs. Most cataloguers mentioned that institutions that employ people as cataloguers can determine if the qualifications that a candidate possesses are suitable. Cataloguer 6 supported this by stating;

“It depends on the institution, if they want a degree or masters, with cataloguing you need to love it though you need to have qualification but love for the job is highly recommended.”

Cataloguer 11 stated:

“I think it depends on the institution you initially work for, for instance a basic degree plus a postgraduate diploma, thats what you need initially.”

Some cataloguers mentioned that a diploma in LIS and a certain number of years of experience would be enough for a senior position as a cataloguer. These cataloguers mentioned that as long as one has a love and passion for the job, they can serve as a cataloguer. Cataloguers who mentioned that a diploma in LIS is enough for this kind of job are Cataloguers 4, 13, 14, 16 and 17.

Cataloguer 4 said:

“I think the diploma is enough, however it doesn’t seem to be hands-on enough; it tends to be very theoretical, the examples are pretty difficult and you happen to find that even module providers find it difficult to understand. I think it needs to be more hands-on. The contents in the qualification are still lacking but then the qualification is perfect for this kind of job.”

Cataloguer 13 said:

“You know what, it depends on the person and how you are willing to work when you get to the institution. I just feel a diploma in LIS is enough, if you are a dedicated individual.”

Cataloguer 14 said:

“I think the diploma in LIS is enough, but too much training is required for one at an entry level. At school one will have a basic understanding of cataloguing but one really needs training as it happens in all professions. The fact is that a cataloguer normally deals with many subject fields;so training is a yearly requirement for a cataloguer.”

Cataloguer 16 stated that:

“I think that a diploma in LIS would be fine.”

Cataloguer 17 said:

“The diploma is enough as long as you have the passion for cataloguing because, you can have a master’s degree but if you don’t have the passion for the job your master's will be useless. You must have the passion for detective work because as much as it can be frustrating, I think if you have the passion and the love to learn and the ability to analyse it would be easy to adapt.”

The other cataloguers state that for one to be a cataloguer, a BLIS or B. BIBL degree would be enough, because this degree takes four years to complete, therefore LIS schools have enough time to train students. However, some cataloguers are not happy with the content of this qualification. One of the reasons is that the core courses are done in semesters. Cataloguers 1, 2, 8, 9, 10, 11 and 12 are of the opinion that a BLIS or B. BIBL is enough for this kind of job, although most of them complained about the curriculum, especially the practical part, in the qualification.

Cataloguer 1 :

“For assistance metadata: one needs a three-year degree in LIS or a B Tech but then one really needs to have a qualification, but to be a cataloguer at entry level one must have a B.

BLIBL or a four-year degree in LIS and a postgraduate diploma in Library Science plus three years' experience, as cataloguing is not an easy job."

Cataloguer 2:

"When you are newly qualified, you are only starting, you build your cataloguing frame of reference as you go and you never stop learning, it does not matter how long. Therefore, a B. BIBL is enough."

Cataloguer 8:

"The degree, more especially the BLIS, is enough because there is enough time to teach all the concepts required in librarianship. The postgraduate diploma should be two years at least because there are many things that must be learnt in a very short period of time."

Cataloguer 9:

"Yes, the BLIS it is enough, considering the fact that a certificate alone cannot do the job but the person has to love his job in order to be productive in an organisation."

Cataloguer 10:

"I would say a BLIS or B.Tech is enough, since a cataloguing position is not a small one and a huge one at the same time; it requires one to have a relevant qualification and be well informed, your experience, for example if you have done cataloguing at school than come across the post then you will have to brush up your skills again."

Cataloguer 12:

"The B.BIBL degree is enough just that it lacks the practical components and more theory is provided, I think if LIS schools teaching cataloguing and classification can also teach students how to use online cataloguing tools, the B.BIBL would be perfect for this kind of job."

The other cataloguer pointed out that initially, for an entry level, a postgraduate diploma in LIS or a B.BIBL is required at an entry point because the postgraduate diploma has all the concepts and practicals required for one to be a cataloguer.

Cataloguer 1:

“Assistance metadata one needs a 3-year degree in LIS or a B Tech but then one really needs a qualification, but to be a cataloguer at entry level one must have a B. BLIBL or a 4-year degree in Library and Information Science and a postgraduate diploma in Library Science plus three years’ experience, as cataloguing is not an easy job.”

Cataloguer 7:

“The postgraduate diploma in LIS is enough alone, but then the practical aspect in this qualification is lacking; students should be given time to do practicals.”

Cataloguers 3 and 15 feel that both the diploma and the degree in LIS are enough, but the problem is that these qualifications lack quality since everything is offered in semesters and the online aspect of the curriculum in the qualifications is missing:

Cataloguer 3:

“For me I feel all these qualifications e.g. diplomas, the degrees are watered down; before it was good and now everything is in semesters. While we studied everything was in a year, and I feel like it's not enough time to learn cataloguing, e.g. with RDA being implemented and the phasing out of AACR2 so you have to learn the differences between AACR2 and RDA.”

Cataloguer 15:

“The programme is not enough; it is lacking the online aspect. For instance, only the MARC21 and the LCSH is available online; the DDC and the RDA tool kit is not available, making it so difficult for students to understand. Even the administration of databases, there should be lessons on that. All in all, South African LIS schools should improve their curriculum now to meet the requirements of the job market. Therefore, in both diploma and degree courses more online aspect of the program should be added.”

Based on these results, an undergraduate diploma in LIS coupled with some years as experience is relevant. Further, six cataloguers stated that a bachelor’s degree is relevant for one to be employed as a cataloguer and others stated that a postgraduate diploma is required for one to be a cataloguer. However, most of these cataloguers stated that it depends on the institution to decide which qualification is sufficient.

5.7. Skills and knowledge required for cataloguing and classification

This question was asked to determine which knowledge and skills are required for the cataloguing job. Knowledge and skills on the following cataloguing and classification tools are required.

- Knowledge MARC21. Cataloguers from both cataloguing centres for public libraries and academic libraries have stipulated that knowledge of MARC21 and its features is vital because there is no way one can code information online without using MARC21. Cataloguer 6 supported this notion by stating: *“Knowing MARC21 tags, indicators and subfields is an important aspect of cataloguing, since cataloguing is done on the system nowadays therefore you must know your MARC”*
- Knowledge of DDC. All cataloguers use DDC for classification. Most of them stated that one should know this tool as part of classification. Cataloguer 5 stated: *“Ability to use DDC to classify materials in a library environment should be demonstrated since it is the classification tool that is used by almost all libraries in South Africa.”*
- Knowledge of LCSH or SEARS List of Subject Headings: most cataloguers reported that before they had been using the SEARS list of subject headings, but now they are using LCSH to assign subject headings. They stated that it is essential for a cataloguer to have knowledge of LCSH. Cataloguer 3 said: *“You have to be computer literate; knowledge of cataloguing rules and tools mainly LCSH, RDA and DDC need basic computer skills.”*
- Know RDA toolkit and/or AACR2: Cataloguers mentioned that knowledge of both RDA and AACR2 is the starting point of cataloguing because these are rules that are used when coding information in MARC. Cataloguer 6 stated: *“Ability to follow international rules and standards of cataloguing, knowledge of Library of Congress rules; know your RDA tool kits or AACR. A cataloguer needs both advanced and basic computer skills.”*
- General knowledge would be highly advantageous if one wishes to be a cataloguer. Cataloguer 11 mentioned that: *“You have got to have a good sense of general knowledge, knowledge on how to use the tools, you need to be a reader and have a love for books; most students don’t know about fiction and non-fiction. Basic computer skills, while advanced skills will be an advantage; have work ethics, you need to have analytical skills.”*

- Computer literacy: both advanced and basic computer skills are important in order for that person to understand cataloguing, since most cataloguing is done online. Most cataloguers indicated that if one has poor computer skills, especially typing and Internet searching, it results in slow job performance, which is a loss to the employer. Therefore, computer skills are essential. Cataloguer 14 said that: *“Cataloguers need advanced and basic computer skills. Because they serve clients that are up to date with computers, their cataloguing need computer skills more than any other requirement.”*
- Internet searching skills- are highly required: both basic and advanced searching strategies are essential. Cataloguer 5 said: *“Computer skills, and as well you should be able to use the Internet.”*
- Paying attention to detail, being analytical, team work and communication skills are some of the soft skills required. Cataloguer 8 supported this by stating: *“I’d say it is a good job for one who likes puzzles, because that’s what you do when you are trying to find a suitable subject and are building up class numbers, using critical thinking and being meticulous: computer skills (basic and advanced) but you can advance yourself as you grow in the profession.”*
- Cataloguer 2: *“Team work; you need to be curious, you need to be interested in it, but the greatest requirement is actually passion; enjoy the work or else you will be bad at it. Yyou need to enjoy working with the details and making it right, fixing where required; you need good communication skills because you cannot go straight to your colleague and say look at the mistake that you have created (manners and work ethics). However, tell them if you have seen the problem before fixing and how it should be fixed, in a polite manner. If you are doing this kind of job you should really be into it and enjoy it so that you can put yourself into it, pay attention to details and everything; you have to enjoy it; lastly have good computer skills.”*

Most cataloguers emphasised that without passion for cataloguing, one cannot do this kind of job correctly. Therefore, the key requirements for cataloguing and classification are passion and a love for the job; beyond that, knowledge of cataloguing tools is highly required.

5.8. Sufficiency of the curricula of cataloguing and classification followed by LIS schools in SA

Most cataloguers were satisfied with the content that is offered by LIS schools. Most of them stated that what they learned in their university courses is what they are practising in the workplace. Some cataloguers mentioned that it has been a while since they left LIS schools but judging from students who usually come for in-service training from LIS schools, they are updated. Cataloguers 3, 4, 9, 12 and 16 are satisfied with the contents provided in cataloguing and classification by LIS schools.

Cataloguer 4:

“I think it is enough, depending on how you are going to utilise it in your work environment.”

Cataloguer 9:

“The curriculum is sufficient and much wider than the ones from the past.”

Some other cataloguers stipulated finding that the curricula offered by LIS schools are adequate. The cataloguers themselves should learn to update their cataloguing knowledge continuously.

Cataloguer 12:

“I think it is enough but cataloguers themselves should update their knowledge of cataloguing, for instance if there are new developments on cataloguing they should learn on their own. Therefore, lifelong learning is very important. Keep abreast of the current trends.”

Cataloguer 16:

“I would think so, due to my interaction with the previous group doing practical work here; they were quite updated about cataloguing; therefore, I think the curriculum is relevant.”

One cataloguer pointed out that it usually depends on the institution that employs one as a cataloguer, because one may find that for special and school libraries, the content would be enough. However, public and academic libraries find it not as sufficient as other types of libraries.

Cataloguer 15 supported this view:

“It depends on who one is trained to work for, for instance for school libraries and special libraries, the curriculum would be enough; however for academic and public libraries it is not enough.”

Cataloguer 11 identified a lot of mismatches in the curriculum based on the way cataloguing is done in LIS schools. She stated the following:

“The curriculum has many mismatches, for instance some universities will teach the course in first and second year and students are sent to the field in their third year. This makes it difficult for students to recap on the tools; sometimes you find that the cataloguing course is offered in level three second semester and you find that students are sent to their practical during the June/July recess, while other very important areas of classification are still not taught since classification is taught in the second semester.”

A majority of the respondents feel that the curricula offered by LIS schools should be updated. These cataloguers complain mostly about LIS schools that teach cataloguing and classification using hard copy tools while most of the tools used in the work environment are online. They also mention the missing practical aspect on cataloguing and classification.

Cataloguer 1:

“The curriculum is not sufficient, this is based on the fact that students cannot perform cataloguing functions when they are fresh from their institution and they cannot be considered as fully fledged cataloguers; that is why institutions or libraries have these entry level cataloguing positions.”

Cataloguer 2:

“It is never complete; it is only a beginning. What you learn in your institution, you have to learn every day and always; you cannot stop, you cannot reach a point where you will say you know everything.”

Cataloguer 3:

“Look, for me that got me into cataloguing, but it was not enough. I had to learn many things on my own. What you learn in your library school is very broad but when you come to the institution that is where you tend to specialise. ”

Cataloguer 6:

“There is RDA now so we did our degrees based on AACR2, so institutions must step up as well, however students must also get a background on AACR2. A lot more has changed but then I think LIS schools should really step up.”

Cataloguer 7:

“Currently I am not sure, because my qualification was obtained long time ago, but I have seen the recent curriculum; I think that it will be wise to update the whole curriculum of the degree, especially the cataloguing and classification.”

Cataloguer 10:

“We do not have enough resources, but the big issue is that cataloguing is done using hard copies in LIS schools and we used SEARS’s list of subject headings, but now we are using LCSH and cataloguing is done online.”

Cataloguer 13:

“I do not know how much time and how many units are provided to you in LIS schools, and you see because we do not know what is offered in LIS schools I will be unable to be positive in judging, but by judging the students when they come here for their in-service training with the knowledge that they seem not to have, I would say it is not enough. I do not think that one year is going to be enough for cataloguing.”

Cataloguer 14:

“The curriculum is not enough. South African LIS schools based on cataloguing and classification and other areas of specialisation need to step up. There is a huge gap between what is done in the field and in the LIS schools, more especially based on the ICT or IT education. Students should be taught about ICT and their applications the most to equip them with their cataloguing skills.”

Cataloguer 18:

“I do not think so; first of all they need to get on board with the current tools and they should also consider the time factor, meaning they should ensure that cataloguing is provided at least in the second and third years of the diploma.”

Some cataloguers are really concerned about the practical aspect of cataloguing, which they feel is not offered appropriately by LIS schools. Some cataloguers mention that LIS schools, especially those that are offering a degree in LIS should provide at least six months of practice to students in the areas of specialisation for librarianship.

Cataloguer 5:

“They need more practicals, and they should make time for cataloguing, because even if there should be much theory, if students don’t understand the process of cataloguing it will be difficult for them to understand and love cataloguing.”

Cataloguer 8:

“It is not enough; more practical time should be allocated to cataloguers-to-be in LIS schools. For instance, six months in practical would be fine, meaning there should be a link between theory and practice.”

Cataloguer 17:

“I think the practical is very important, yet you can teach a student from Table 1 to Table 6, but if you cannot provide the practice, students will not understand. Some students reported that they are not allowed to use volume four, the index of DDC, and the starting point of classification. How are students going to memorise DDC numbers from 000-999? That is impossible, you cannot just go straight to schedules without consulting the index. If you didn’t learn cataloguing and classification and think that you can use the schedules or the index to build up class numbers, there is no way because the DDC number is built up using all 4 volumes. For instance, if you are given dictionary of psychology then there are no ways you can use the index or schedules alone and if you don’t know how to build that number.”

Therefore, all of the statements show that there must be an inclusion of Information Communication Technologies (ICTs) and a good balance between theory and practical cataloguing. Proper teaching of cataloguing and classification would ensure higher productivity in the library environment. The majority of cataloguers stipulated that LIS schools should also update their curricula and use online tools more than hard copies. Table 8 shows the match between what is taught in LIS schools and job market requirements (taken from newspapers and professional cataloguers).

Table 8: Curriculum vs requirements table

Items	Curricula offered in LIS schools	Job market requirements	
		Newspaper scanning	Professional cataloguers
Qualifications	Bachelor's degree in LIS and postgraduate diploma in LIS	Diploma in LIS, Bachelor's degree in LIS and Postgraduate diploma in LIS	Diploma in LIS, Bachelor's degree in LIS and postgraduate diploma in LIS
Common tools used for cataloguing	AACR2 or RDA, DDC or LC, LCSH, MARC21		
Knowledge, skills and attitudes	<p>Most LIS schools expect their students to understand</p> <ul style="list-style-type: none"> • Descriptive cataloguing and how to use AACR2 and RDA • Classification and be able to organise information materials through the use of DDC and • Be able to assign subject headings using LCSH. • One LIS school offers contents that are more ICT based compared to other LIS schools. 	<ul style="list-style-type: none"> • Basic and advanced computer skills; • Communication skills both verbal and written; • Interpersonal skills; • Good organisation skills; • People skills and; • Multitasking skill. • Knowledge of cataloguing tools for example DDC and AACR2 or RDA USMARC and LCSH; • Knowledge of WebDewey and Web Class and Smart port Z39; • Knowledge of cataloguing databases e.g. SLiMS, OCLC connexion and InMagic; • Knowledge of OPAC library system, South African catalogue (SAcat) and World cat; • Knowledge of Millennium system, knowledge of GroupWise email and; • knowledge of legal deposits • experience with taxonomy 	<ul style="list-style-type: none"> • Knowledge of MARC21 – • Knowledge of DDC- • Knowledge of LCSH • Know RDA tool kits or AACR2- • General knowledge- • Computer literacy, both advanced and basic computer Internet searching skills- • Pays attention to details, being analytical, team work and communication skills are some of the soft skills required.

		<ul style="list-style-type: none"> • metadata and tagging for digital content management and; • robust digital content experience; • mastery of interactivity and the Web and lastly familiarity with common social platforms. 	
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5.9. Summary

Results from interviews supplemented or confirmed the two sets of results tabled above by giving qualifications that cataloguers have and the duties they perform and tools that they use in their job environments. These results also provided cataloguers' perceptions on the sufficiency of the curriculum and qualifications offered by LIS schools. Moreover, interviews with cataloguers provided skills and knowledge required of a cataloguer. Results from interviews with cataloguers also revealed challenges faced by cataloguers in their work environments. These results concluded by providing cataloguers' perceptions on the future of cataloguing.

Cataloguers need a qualification from an accredited university coupled with several years of experience. Interviewed cataloguers also pointed out that being a lifelong learner is vital for cataloguers. Cataloguers suggested that LIS schools should update their curricula instead of using hard copy and online versions of the tools. Also, cataloguing standards should be used to teach students. Cataloguers experience challenges as stated above. The following chapter (Chapter 6) will provide detailed discussions of the results from Chapter 4.

CHAPTER 6: DISCUSSION OF MAIN FINDINGS

6.1. Introduction

Discussions of findings provide meaning to data itself, since the analysed data cannot provide answers to research questions on its own. Thus it is an essential component of the study to discuss the findings to ensure that the objectives of the study are met. Therefore, this chapter aims at providing meaning to the analysed data from LIS schools' course outlines, job advertisements from academic libraries and cataloguing centres for academic libraries and the interviews with cataloguers to evaluate whether the curricula from LIS schools meet the job requirements of employers of cataloguers.

Miller and Brewer (2003) further mention that the perception and researcher's initiative of the subject matter and opinion of other researchers in the same subject matter influence the interpretations of the data. Data interpretation means that the results of a given study are connected to those of other studies (Danielm and Sam, 2011). The discussion of findings for this study is arranged around the themes built on the research objectives and other results concerning the research problems regarding burning issues in the cataloguing profession.

6.2. Cataloguing and classification curricula

The LIS curriculum findings sought to achieve the first objective of the study which is to establish what is currently taught in LIS schools in South Africa. This objective was addressed by data obtained from course outlines from six LIS Schools.

6.2.1. Aim and purposes of teaching cataloguing and classification

LIS schools teaching cataloguing and classification aim at providing students with a knowledge of organising information materials so that they can be easily retrieved by users. LIS schools aim at providing students with the necessary theoretical knowledge and practical descriptive cataloguing skills required to do original cataloguing through the application of international standards, in order to aid in information retrieval. They also aim at familiarising students with standards and models used to facilitate the discoverability of information resources in the range of information systems. International standards such as AACR, RDA, LCSH and MARC21 are taught. Results further indicate that LIS schools also aim at familiarising students with knowledge and skills on current cataloguing theories and

practices. One LIS school indicates that it aims at familiarising students with the role and implementation of information technology in the knowledge environment and scholarly communication for optimum resource discoverability.

By classification tuition, LIS schools aim at providing qualifying students with competent demonstration of understanding of necessary skills for effective subject organisation and the evaluation of subject organisation tools. Further, the classification course is aimed at introducing students to the methods and practices needed for the analysis, synthesis and evaluation of recorded knowledge and information by means of general classification and particularly in the library environment. All LIS schools mentioned that students must understand the use of DDC and LCSH in classification.

6.2.2. Outcomes of cataloguing and classification in LIS schools

After the completion of cataloguing, LIS schools anticipate that students will demonstrate practical knowledge of describing bibliographic materials according to cataloguing rules or standards such as RDA and AACR2 and be able to use MARC21. Others indicated that students should demonstrate the practical application of ISBD in describing information resources. Students are expected to be familiar with digital technology including library management and content management systems and to be able to select the most appropriate technology in a range of applications and settings. All LIS schools indicated that on completion students are expected to understand the principles, practices and theories used in resource description, creation of bibliographies and other datasets.

Based on classification, students are expected to know the role of subject analysis in resource description and they should understand principles and theories underpinning subject indexing/cataloguing with emphasis on the LCSH. These LIS schools also expect students to understand the structure and the practical application of DDC. Further, LIS schools also expect students to understand the post and pre-coordinated indexing concepts and to be able to use controlled language for indexing through the utilisation of the thesauri.

We assume that these results are influenced by the content of LIS schools combined with the aims of those LIS schools providing cataloguing and classification. The outcomes of the courses are in line with the major aims of the LIS schools.

6.2.3. Cataloguing and classification curriculum

The LIS schools' curricula for cataloguing include history of cataloguing rules (AACR2 and RDA); cataloguing principles; computerised cataloguing using the MARC format; learning SABINET online; digital curation and other important topics detailed in Chapter 4.

The classification curricula in LIS schools include the following topics: classification theories, principles and forms of classification schemes, mainly faceted and enumerative ones; subject analysis and controlled vocabulary; the structure and principles of DDC scheme; the structure and principles of the LCSH; practical application of classification using DDC and subject indexing using LCSH; and other important topics (refer to Chapter4). The curriculum also involve the practical parts of both cataloguing and classification.

Compared to counterparts in developed countries, for instance, cataloguing and classification education in the USA provides no practical learning at undergraduate level (Davis, 2008). LIS schools in the USA provide cataloguing in one semester only, which is approximately fifteen weeks. The findings from this study concur with Davis (2008), Hsieh-Yee (2008), Ocholla and Ocholla (2014), and Ocholla *et al.* (2015) who identified similar content offered by LIS schools in other parts of the world. Davis' study was based in America, while Ocholla and Ocholla looked at the South African LIS education.

Hsieh-Yee (2008) identified the fact that more technical aspects, including the manner in which bibliographic records are processed and managed in the electronic environment, have to be included in the curriculum. Hsieh-Yee (2008) said this in relation to contents created on the web. Therefore, Hsieh-Yee (2008) recommended that contents on digital curation and communication technologies be included when training or teaching cataloguers-to-be. The current study discovered that only one LIS school in South Africa has contents that cover the recommendations of Hsieh-Yee (2008). Based on the course outlines, LIS schools provide balanced content concerning the integration of traditional and technocentric cataloguing curricula. Ocholla and Ocholla (2014) brought the concern of whether LIS schools should teach RDA. The current study demonstrates that most LIS schools are already teaching RDA. Ocholla and Ocholla' s (2014) findings have been attended to by many LIS schools in South Africa.

Davis (2008) also identified eight major areas which are definitely in line with the findings of the current study. They include the following topics:

- Organisation - focusing on the introduction to general principles and theories of bibliographic control and basic knowledge of information organisation. Topics that are usually included here are an introduction to theories and principles of organising bibliographic information or fundamental concepts of knowledge organisation.
- Basic cataloguing - focusing on the introduction to knowledge and skills related to the organisation of information and cataloguing. These skills include subject analysis, AACR2, MARC21, cataloguing rules, LC, DDC);
- Advanced cataloguing (AC) - focusing on detailed, complex aspects of cataloguing that may include hands-on experience in creating bibliographic records and practical application of the classification schemes or cataloguing rules.
- Subject analysis - focusing on subject cataloguing and classification. This also includes some form and elements of hands-on practical experience.
- Indexing and abstracting - these concentrate on the principles, practices and applications of indexes and abstract or controlled vocabulary.
- Metadata schema and applications - focus on advanced cataloguing, dealing specifically with electronic resources in the library.

These areas are broad areas of both cataloguing and classification education taught in LIS schools. Fortunately, LIS schools in South Africa cover such topics as identified by Davis (2008). Ocholla *et al.* (2015) noted that the curriculum offered in LIS schools in South Africa is similar to the one offered in the USA and Brazil, though there are minor mismatches.

Bowman (2009) mentions virtually identical results from the study conducted in the British Isles. Bowman (2009) discovered topics which have similar content to those found in South Africa.

Ma (2005) supported the findings of this study by revealing that at the undergraduate level, students understand the theories, rules and principles of cataloguing and they are able to revise and compile a thesaurus, classification scheme and cataloguing rules.

The results of the current study also concur with Yusuf (2015) on the point that LIS schools need to add more practical aspects of the course and have a laboratory with all equipment meant for cataloguing and classification. This can improve the understanding of the course by students.

In the South African context, manual cataloguing is still relevant in the curriculum. This is because some libraries in South Africa do not have electricity (Ocholla & Ocholla, 2014).

This implies that traditional and technocentric education for cataloguing and classification should be integrated in the curriculum to ensure that standards for the cataloguing profession are met. Therefore, based on the results from course outlines, the cataloguing and classification curriculum consists of both traditional and ICT based components.

The results revealed that cataloguing and classification courses are offered in the bachelor's degree and postgraduate diploma in LIS. However, it worth noting that cataloguing and classification is also offered at undergraduate diploma level in South African LIS schools, but this study did not involve respondents from schools offering them at undergraduate diploma levels.

6.3. Cataloguing job advertisements

The study used ten cataloguing and classification job advertisements to investigate employer job requirements and cataloguers' duties.

6.3.1. Educational requirements and years of experience for cataloguers

The results revealed that libraries require candidates to be in possession of a Higher Diploma, National Diploma, BLIS/B. BIBL or a BTECH. The average work experience is two to four years, unless it is an internship or entry-level position. Studies such as Cloete (2005) discovered similar educational requirements in South Africa. Cabonero and Dolendo (2013) found that academic cataloguers need a BLIS degree at an entry level. Cerbo (2011) indicated that it is crucial that a cataloguer should have a recognised professional qualification since it entails understanding professional principles or standards, rules and methods of bibliographic work. Lussky (2008) pointed out that most of the job advertisements required no experience at entry level. Lussky (2008) further agrees with this study's findings that at internship level no experience is required.

The results clearly indicate that cataloguing and classification positions require a qualification in librarianship, ranging from an undergraduate diploma to a postgraduate diploma in LIS and that experience is needed for professional cataloguers.

6.4. Skills, knowledge and attitudes required

Knowledge, skills and attitudes required by the employer were also investigated. The findings revealed that a variety of skills, knowledge and attitudes are required for cataloguing and classification position. Skills that are required include: basic and advance computer skills (MS Office Suite, emails and Internet usage), good communication skills both written and verbal, good interpersonal skills, good organisational skills and multitasking skills. Other requirements include a drivers' licence (code 8/10) which seems to be a consistent requirement across all public cataloguing job advertisements.

Raju (2014), Lussky (2008), Carbo (2011), Carbonero and Dolendo (2013) and Orbih and Aina (2014) emphasise the importance of computer skills in the library environment. Carbo (2011) points out that a digital "tsunami" of new materials such as databases, electronic resources, repositories, web searches, online catalogues, e-books and others, has brought a technology innovation to the library environment. Cataloguers are required to renew their skills and knowledge. Glasser in Carbo (2011:2) emphasised that "to meet the challenges of today's cataloguing positions, library students must develop a broader set of skills that, in addition to traditional theory and practice of principles of bibliographic control and metadata standards, include management skills, computer skills, the ability to work in a team and independently, flexibility, and, perhaps most importantly, willingness and an ability to learn and embrace continuous change". Lussky (2008) stipulated that technological skills are required in order for cataloguers to organise digital collections, hence most information comes in digital format. Raju (2014) has stated that disciplinary skills, generic skills and personal competences are required for information organisation purposes. Under disciplinary skills, Raju (2014) mentioned cataloguing and classification, traditional skills which have to be linked with technology in order to organise information on the web. Raju (2014) further pointed out that generic skills, also referred to as transferable skills, are also important in the work environment. These include communication, interpersonal problem solving, teamwork and critical thinking skills. Personal competence includes a capacity for continuous learning, ensuring change and being able to work independently. These results match those of the current study.

The results further indicate that knowledge of DDC and AACR2, RDA, USMARC and LCSH are essential for cataloguers. Also, online cataloguing tools, for instance WebDewey,

Cataloguers Desktop, Web Class, OCLC's Bibliographic formats standards, knowledge of databases like inMagic SLiMS and OCLC connexion are required.

Raju (2016) lists the following knowledge and skills as required in by cataloguers: integrated library systems (e.g. Innovative Interface, UNICORN, SirsiDynix, ALEPH, INNOPAC, Millennium) and metadata standards (e.g. OPAC, MARC21, OCLC, RDA, Dublin Core). Most interestingly, these skills are indicated as highly ranked skills. This study found that these skills are also highly sought after by employers.

Carbonero and Dolendo (2013) point out that knowledge of descriptive cataloguing, classification and subject analysis is essential. They mention that these are the core areas that a cataloguer should master. Cloete (2005), Lussky (2008), Carbo (2011), Carbonero and Dolendo (2013) and Orbin and Ana (2014) concur. Cloete (2005) in South Africa discovered that knowledge of cataloguing rules such as AACR2, classification tools such as DDC, UDC and LC and subject analysis tools, specifically LCSH or NLM, Mesh and indexing Dublin Core, are essential. Proven expertise in online cataloguing on SABINET, SACat, WorldCat and SABICAT, knowledge of automated cataloguing on USMARC/MARC21-based system and knowledge of URICA, INNOPAC, CPALS and OCLC system were part of the knowledge required as stated by Cloete (2005).

The results indicate that RDA is starting to be a requirement. This is because AACR2 is gradually being phased out. Cerbo (2011) is of the opinion that due to the introduction of new digital information materials, it is required that future librarians will possess RDA knowledge and skills. Nempeya (2009) recommended that cataloguers should have skills of engaging in resource sharing, for example communicating online by using the Z39.50 protocol to link to other catalogues and engage in the exchange of accessions lists. This will improve the quality of services as more and varied materials will be accessed using the Internet (Nempeya, 2009). Al Hijji and Fadlallah (2012) observe that a professional cataloguer must have a comprehensive knowledge of rules, methods and principles of bibliographic control and broader skills in the utilisation of its tools and resources so that accuracy is ensured for entries, the assignation of class numbers of catalogued items and subject headings, in order to improve the quality of the library catalogue.

The literature above concurs with the current study in stating that bibliographic workers should have a knowledge of cataloguing rules, principles and methods as well as technological skills.

The knowledge and skills have been found from both data sets: job advertisements and also interviews with cataloguers. Studies by Lussky (2008) and Carbonero and Dolendo (2013) concur with the knowledge and skills found. Glasser (2007) states that even though traditional cataloguing skills are still needed, today's employees must have some additional skills, for instance computer skills, communication skills, and management skills as well as characteristics which may include flexibility, being willing to learn, and a tolerance for change in order to succeed and flourish in the cataloguing field.

6.5. Job descriptions or duties of a cataloguer

Job advertisements point out that the cataloguer's core function is to catalogue and classify library materials. Data from job advertisements revealed that cataloguers are supposed to perform information retrieval from different information sources. They also have to catalogue and classify materials using the AACR2 and RDA toolkit, and through using Web Class (LCSH), WebDewey (DDC).

The Bibliotheca Alexandrina Institution (2013) lists a number of duties which must be performed by a cataloguer. The list include the ones found in the study. Orbih and Aina (2014) also mention that a cataloguer does original cataloguing, retrospective cataloguing and lastly copy cataloguing, functions that have also been found in this study.

6.6. Professional cataloguers' opinions

This section presents the discussions of findings of professional cataloguers. As indicated earlier, this question sought responses on the sufficiency or inadequacy of the contents embodied in cataloguing and classification curricula in LIS schools; tools they use for cataloguing in their libraries; challenges they face and future opportunities for cataloguing as a profession. This section finally discusses whether there is a link between what LIS schools offer and what the employer requires from cataloguers.

6.7. Sufficiency of the cataloguing and classification curriculum in the work place

The study reveals that what professional cataloguers learned at university is what they are practising in their workplace. Professionals also stated that they have observed that the students they train are good when assigned practical jobs, therefore they believe that the

content offered is sufficient. However, cataloguers need to continuously update themselves on the new trends of the profession through lifelong learning. Although six cataloguers mentioned that the curriculum is satisfactory, the twelve cataloguers feel that the content is not comprehensive enough. They stated that most LIS schools do not have ICT or online components incorporated in the curriculum, e.g. DDC, while in practice Web Dewey is used, yet LIS schools still use hard copies for teaching. Others stated that there is no RDA toolkit in their LIS schools and that less practical exposure is provided for these courses. For instance, they do MARC examples manually but they never experience the actual cataloguing in MARC21. As much as these responses are acceptable, they might be influenced by the fact that eight cataloguers left university a long time ago, for instance 15 to 35 years ago. When they were still at university, such tools might not have been available. The study accepts such results with caution.

The first part of the study corresponds with Ocholla and Ocholla (2014) finding that the cataloguing and classification content is sufficient. However, thirteen respondents dispute the findings. This means that according to professional cataloguers the content offered is not sufficient. Hsieh-Yee (2008) stated that cataloguing and classification should include more computerised cataloguing methods as opposed to manual cataloguing which is consistent with the suggestions of professional cataloguers. However, cataloguing and classification course outlines indicate that all but one LIS school teach computerised cataloguing. This is in agreement with Cerbo (2011) who states that cataloguing practices are more predominantly technological than manual, so the curriculum is in line with this assertion.

Thirteen cataloguers revealed their concern on the insufficiency of the practical component of the curriculum. They are supported by Davis, 2008; Bowman, 2009; Yusuf, 2015 and Ocholla & Ocholla, 2014, who all state that there must be a balance between theory and practice. Hill and Intner in Davis (2008:195) stated that “When the library school curriculum provides no opportunity for students to perform the actual cataloguing, many who might have loved the work will never apply for cataloguing positions and those who fancied themselves as cataloguers and were disappointed, it will fall to the employer to discover that their new employee is not well matched for the work.” Davis (2008:190) also stated that while one can be taught the rules of cataloguing, one can even learn the vocabulary and how basic thoughts are carried, but to be truly fluent one must practise.

This implies that even if the components embodied in the curriculum are satisfactory, based on the theoretical part, practise will highly reinforce the concepts learned in class as skills and knowledge of the profession. Although LIS schools should provide cataloguing principles, they should also provide practical application of those principles by offering advanced cataloguing courses that provide hands-on experience. Davis (2008) further states that that none are native speakers of cataloguing; cataloguers have all had to learn it through immersion and training.

6.8. Tools used for cataloguing and classification

The study revealed that the following tools are used for cataloguing: DDC 23 or WebDewey, LCSH or SEAR list of subject heading, MARC21 tags, SLiMS, SirsiDynix, Millennium system, AACR2, RDA and databases like OCLC. Nempeya (2009) found similar tools in Malawi. The study however discovered that RDA is being implemented, hence the need for RDA tools.

SLiMS software is mostly used by the public libraries involved in this study. Ocholla and Shongwe (2013: 40) found the following tools to be required by the LIS job market: AACR2, Dspace, MARC21, USMARC, SABINET, digital assessment systems, LCSH, metadata schema, OCLC connexion, ILS, bibliographic format, UNICON, South Africa catalogue, World catalogue, OPAC, RDA, Library web 2.0, Millennium system and INNOPAC is highly recommended in most librarian based advertisements. Almost all these tools are cataloguing tools identified by the current study.

Cloete (2005) also discovered that AARC2, DDC, UDC, LC, LCSH, NLM classification, Mesh and indexing Dublin Core are tools that are required for cataloguing in the library environment. This indicates that traditional skills for cataloguing and classification in the library environment are still highly required, yet ICT-based skills and knowledge should be integrated.

6.9. The link between cataloguing and classification and job requirements

Results from LIS schools' course outlines showed the cataloguing and classification curricula taught by LIS schools in South Africa, while cataloguing job advertisements and results from

professional cataloguers' interviews showed employers' expectations for the competencies of cataloguers.

The study found that LIS schools still teach traditional cataloguing using standards and tools such as AACR2, DDC, LCSH, indexing and abstracting, ISBD and MARC21 and RDA. According to the course outlines, the main reason for teaching this course for students to be able to organise information.

Job advertisements indicate that employers require knowledge and skills in WebDewey, AACR2, RDA, LCHS SLiMS, MARC21, SABINET, metadata, InMagic, Millennium system digital curation and many others. Job advertisements also indicate that on average employers are looking for two to four years' experience in the library environment. The advertisements further reveal that the duties of cataloguers are to perform information retrieval from a number of information sources and also to catalogue and classify material.

Professional cataloguers stated their support of findings from job advertisements in terms of the knowledge, skills and attitudes required, but did not agree on the adequacy of the content covered.

Data from job advertisements showed the following requirements based on cataloguing and classification. These job advertisements required an undergraduate diploma, bachelor's degree and postgraduate diploma in LIS and on average a minimum of two to four years' experience. They further required knowledge of AACR2, RDA, MARC21, WebDewey, metadata standards, LCSH, digital curation, different ILS for instance InMagic, Millennium and SirsiDynix system. Computer and communication skills appeared to be a consistent requirement across all job advertisements.

Professional cataloguers indicated they have qualifications ranging from an undergraduate diploma to bachelor's degrees and postgraduate diplomas, which were obtained from the relevant LIS schools. Cataloguers further mentioned that LIS schools provide more theoretical education but less practical components of these courses. In addition, cataloguers stated that contents offered by LIS schools are lacking an ICT component, for instance, most LIS schools do not have computer laboratories with installed RDA toolkit, WebDewey, ILS with MARC21, etc. Although students may have mastered the theory of these cataloguing and classification tools, they never experience the actual use of such tools. Cataloguers also

complain about the insufficient time provided for fieldwork and class practicals involving cataloguing and classification.

Therefore, even though the data sets from LIS schools are in line with data in the cataloguers' job advertisements, cataloguers identified certain mismatches and shortcomings in the curricula offered by LIS schools. Based on the results, LIS schools incorporate both traditional and technological aspects of cataloguing and classification. However, most LIS schools provide less practical tuition in the courses. Based on the data from cataloguers, the LIS schools use outdated tools in teaching students. For instance, they use hardcopies of DDC 21 or 22 while in the field WebDewey or DDC23 is used by many academic and public libraries.

6.10. Summary

This chapter discussed the finding of the study based on the themes arranged by the researcher. The major findings of the study reveal that based on the curriculum, the units for traditional cataloguing across all LIS schools are sufficient. However, cataloguers complained that the ICT component of the curriculum is lacking. Further, cataloguers indicated that most LIS schools in South Africa lack the practical component of cataloguing and classification curriculum; they teach more theory and provide less practicals for these courses. Most studies support the findings of this study. Some are from Africa and others from abroad.

Based on the job requirements, a qualification for a librarianship profession is required and also a couple of years' experience. Traditional cataloguing skills, knowledge and attitudes are required. Common knowledge found across all job advertisements includes AACR2, DDC, LCSH and MARC21 knowledge. However, most current job advertisements require RDA from academic libraries instead of AACR2. Most job advertisements require computer skills, communication skills and information or knowledge management skills. In terms of their attitudes, candidates must be able to pay attention to details and be willing to learn.

Results from cataloguers' interviews were also discussed and the majority showed that LIS schools should step up and update their curricula by adding the practical and the technocentric elements in teaching both cataloguing and classification courses. Laboratories with all online cataloguing equipment were recommended by all cataloguers. These tools include RDA tool kit, WebDewey, Web Class, LCSH online version and other important

databases. The following chapter (Chapter 7) provides the summary, conclusions and recommendations based on the findings of this study.

CHAPTER 7: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1. Introduction

This chapter provides a summary of the study, with some conclusions and recommendations. The study aimed at investigating whether the cataloguing and classification curricula provided by LIS schools in South Africa produces candidates with skills which employers require. The summary of each of the objectives is given below:

- To analyse the cataloguing and classification curricula in LIS schools in South Africa, in order to explore which LIS qualifications offer cataloguing and classification courses.
- To determine cataloguing and classification job requirements and functions in South Africa.
- To investigate whether the cataloguing and classification curricula offered by LIS schools meet the job requirements.

7.2. Summary based on the objectives

The summary of this study is based on the above-mentioned objectives. The following is the summary of the whole study:

7.2.1. To analyse the cataloguing and classification curriculum in LIS schools in South Africa, in order to explore which LIS qualifications offer cataloguing and classification courses

LIS schools aim at providing students with the requisite theoretical and practical knowledge of descriptive cataloguing skills for original cataloguing through the application of international standards, in order to aid in information retrieval. LIS schools aim at providing students with a knowledge of organising information materials so that they can be easily retrieved by users. At the end of the courses, students are expected to demonstrate theoretical understanding of bibliographic control and demonstrate practical knowledge of describing bibliographic materials according to cataloguing rules or standards such as RDA and AACR2 and to be able to use MARC21. Students are also expected to be able to perform indexing and abstracting.

The study revealed that LIS schools still teach traditional cataloguing and classification, but with the aid of ICTs. The main cataloguing curriculum covers bibliographic description using

AACR2, RDA and MARC21; metadata and digital curation. Classification curricula in LIS schools include classification theories and practical sessions.

Qualifications that have cataloguing and classification courses in LIS schools are bachelor's degrees and postgraduate diplomas in LIS. Four LIS schools offer a BLIS in which cataloguing and classification are compulsory courses. This study discovered that there are four LIS schools that teach cataloguing and classification at postgraduate level. It is worth noting that other LIS schools would offer two of these qualifications. For instance, LIS school one offers both a bachelor's degree and postgraduate diploma in LIS. Therefore, there are only six LIS schools that submitted their course outlines. This objective was achieved through looking at the course outlines to investigate the status of cataloguing and classification curricula in LIS schools.

7.2.2. To determine cataloguing job requirements and functions in South Africa

The study indicated that either an undergraduate diploma, bachelor's degree plus a postgraduate diploma coupled with a minimum of two years' experience are required for one to be a cataloguer. Skills that are required include: basic and advanced computer skills (MS Office Suite, emails and Internet usage), good communication skills, written and verbal, good interpersonal skills, good organisational skills and multitasking skills. Other requirements include a drivers' licence (code 8/10) which seems to be a consistent requirement across all public cataloguing job advertisements.

The results further indicate that knowledge of DDC and AACR2, RDA, USMARC and LCSH are essential for cataloguers. Further, online cataloguing tools like WebDewey, Cataloguers Desktop, Web Class, OCLC's Bibliographic formats standards, knowledge of databases like inMagic SLiMS and OCLC connexion are also required. One cataloguing job advertisement from the national library requires that candidates have knowledge of legal deposits and applicable legislations and have a working knowledge of Millennium Library System (Millcat), knowledge of Z39.50 and Unicorn (online system to make the catalogue accessible on the worldwide web) and knowledge of OPAC library system, SAcac and Worldcat.

Attitudes required for cataloguers as mentioned in the job advertisements include: honesty and integrity, being highly motivated, paying attention to details, a sense of urgency and the ability to develop oneself and others, a high level of self-confidence and self-discipline, assertiveness and time management, stress management, providing good judgement and the

ability to assess the situation and give relevant advice, a client oriented and customer focus, being self-driven, displaying initiative, an ability to meet strict deadlines and to work under pressure, and adequate time management.

The current study revealed that duties of a cataloguer working in an academic as opposed to a public environment are almost the same, though there are minor differences. Their core function is to catalogue and classify library material. The cataloguing job advertisements reveal that cataloguers are expected to perform information retrieval from Sabinet linked databases, EBSCOHOST, Science direct and all other library databases; original and copy cataloguing using AACR2, RDA, classifying using WebDewey (DDC) , Web class (LCSH). These materials include theses, books, AVs, and other academic materials; to check and control publications before providing the subject coverage; find or download bibliographic records through the use of other library catalogues (mainly OCLC) use smart port (Z39.50) to export records and lastly to adhere to in-house cataloguing standards, procedures and work flows. This objective was achieved through job advertisements and cataloguers' interviews because it revealed what employers require.

7.2.3. To investigate whether the cataloguing and classification curricula offered by LIS schools meets the job requirements

Course outlines indicated that the common aim of providing cataloguing and classification to students is to ensure that they understand the principles underlying knowledge organisation. Their outcomes are the result of the contents coupled with the aims. The common contents of cataloguing and classification from LIS schools course outlines include: history of cataloguing rules (AACR2 and RDA); cataloguing principles; computerised cataloguing; application of ISBD in bibliographic description and tracing the differences from AACR2 to RDA, descriptive cataloguing; providing access points and the comparison of retrieval devices. The tools used for teaching cataloguing are: AACR2, RDA, and MARC21; classification theories, principles and forms of classification schemes, mainly faceted and enumerative ones; subject analysis and controlled vocabulary; the structure and principles of DDC scheme; the structure and principles of the LCSH; computer-based indexing systems; application of controlled vocabulary in indexing, mainly thesauri in indexing, and lastly evaluation of information retrieval systems and structures.

Only one LIS school offers content on digital curatorship and other related sophisticated web-based cataloguing and classification contents. The curriculum also involves the practical

elements of both cataloguing and classification; however, some LIS schools provide them on a manual basis.

The job advertisements offered similar findings to interviews with cataloguers, although there are opinions gained from the experience of cataloguers. The general findings from job advertisements firstly indicated that a qualification in librarianship is a compulsory requirement. This qualification should be at least an undergraduate diploma, or bachelor's degree or a postgraduate diploma in LIS coupled with three to four years' experience. The major findings indicated that computer skills, communication skills, interpersonal skills, organisation and multitasking skills were seen as consistent requirements. Job requirements indicated knowledge of these cataloguing tools: DDC and AACR2, RDA, USMARC and LCSH, which are essential for cataloguers. Knowledge of the OPAC library system, SAcad and Worldcat were other common requirements. One cataloguing job advertisement from the National Library requires that candidates must have knowledge of legal deposits and applicable legislation and have a working knowledge of the Millennium Library System (Millcat), knowledge of Z39.50 and Unicorn (online system to make the catalogue accessible on the worldwide web).

Further, cataloguers also indicated that knowledge of online cataloguing tools, for instance WebDewey, Cataloguers Desktop, Web Class, OCLC's Bibliographic formats standards, knowledge of databases like inMagic, SLiMS and OCLC connexion, is also a requirement.

However, cataloguers who hold a bachelor's degree complained that the time provided for cataloguing in this qualification was insufficient; they recommended that there must be extended time so that students can understand the course.

The majority of cataloguers when asked about the sufficiency of the curriculum offered by LIS schools stated that most LIS schools do not have ICT or online components incorporated in the curriculum, e.g. DDC, while in practice WebDewey is used; yet LIS schools still use hard copies for teaching. Further, some stated that there were no computer laboratories with MARC in their LIS schools and that less practical exposure is provided for these courses. For instance, they would do MARC examples manually but they never experience the actual cataloguing in MARC21. As much as these responses are acceptable, they may be influenced by the fact that eight cataloguers left university a long time ago, for instance, 15 to 35 years ago. When they were still at university, such tools may not have been available then. The study accepts such results with caution.

Most of the cataloguers also voiced their concern about the insufficiency of the practical component of cataloguing allocated by LIS schools. Cataloguers stated that LIS schools mainly teach theory and less practical work (class practicals). This hinders the understanding of cataloguing and classification.

From these major findings, it is clear that the contents offered by LIS schools are sufficient and relevant to what the employer is looking for. However, cataloguers' concerns about the insufficient of time devoted to cataloguing in a bachelor's degree influences these results.

7.3. Conclusions

The conclusions of this study are based on the major findings from the LIS schools' course outlines, job advertisements and interviews with cataloguers. Therefore, based on the findings from LIS schools, the researcher concludes that cataloguing and classification courses are offered at the bachelor's degree and postgraduate diploma in LIS. The contents offered by LIS schools are sufficient, since they include both traditional and ICT-based contents of cataloguing and classification. The cataloguing course outlines also show that the new cataloguing standard known as RDA is taught by all LIS schools that teach cataloguing and classification. This implies that LIS schools have updated contents based on cataloguing and classification. Course outlines from LIS schools also indicate that they offer some class practicals. Although most of them did not indicate the duration of practicals, it is believed they offer such course components according to the National Curriculum Framework.

Based on the data from job advertisements on the requirements of a cataloguer, it is noted that at least a bachelor's degree or postgraduate diploma is required for one to be a cataloguer. The results of the study and the literature show that traditional cataloguing standards are still a requirement in the job environment. These tools and standards include AACR2, RDA, DDC, LCSH, indexing and abstracting. Although the literature from other countries emphasised that knowledge of the organisation of information from the work (digital curatorship) is a common requirement, only one advertisement required this. Perhaps the fact that only ten job advertisements were sampled was a factor. Across all job advertisements, RDA was a common requirement ; LIS schools indeed teach this new cataloguing standard. A common duty of cataloguers is cataloguing and classifying library materials for easy retrieval purposes. Such materials include books and other non-book materials.

Based on the data from cataloguers, the study revealed that they are not satisfied with the contents offered for cataloguing; they claimed that these contents are sufficient but outdated. Cataloguers also complained that the practical work (class practical and fieldwork) is not enough as students, when they are newly recruited from LIS schools, fail to catalogue materials. When looking at data from cataloguers, the researcher concludes that the time provided for cataloguing in LIS schools is not adequate, especially within a bachelor's degree in LIS. The study, based on the data from cataloguers, proposes that there must be an extension of time for teaching cataloguing and classification in this qualification.

Although course outlines have shown that cataloguing and classification curricula in LIS schools is sufficient, the extent to which LIS schools teach these courses is not clear. This is because the researcher did not include module facilitators in the current study; the only opinions that are available are from practising cataloguers who have been educated in LIS schools. However, to explore the manner in which these courses are taught, it would be worthwhile to include course facilitators or LIS schools' HODs to establish how exactly these modules are taught.

7.4. Recommendations

The study recommends the following to academics, LIS schools, employers and cataloguer:

7.4.1. Recommendations to LIS schools

- Teaching of traditional cataloguing should continue because it is still required in the job environment.
- LIS schools should ensure that they provide all necessary equipment required to teach cataloguing and classification. This includes laboratories with Internet access, RDA tool kit, WebDewey, Web Class and other relevant material.
- LIS schools should send lecturers teaching cataloguing and classification to training courses in the form of workshops, conferences or in-service training programmes. This will enhance their cataloguing skills, which will result in productive teaching and learning.

7.4.2. Recommendations to academics teaching cataloguing

- Communication between lecturers and cataloguers should be available and strong links established to ensure a relevant curriculum.

- Lecturers should continuously update their skills through research, lifelong learning and attending workshops to keep up-to-date with the latest trends in the field.

7.4.3. Recommendations to employers' of cataloguers

- Provide on-going training to cataloguers in order to remain relevant in the field. For example, being up-to-date with the latest trends in the field.
- Provide training for RDA

7.4.4. Recommendations to cataloguers

- Cataloguers must keep updating themselves by enrolling with online LIS schools that offer cataloguing and classification education in order to remain relevant in their fields.
- Cataloguers should also ensure that they communicate among themselves, either in their organisations or with other external stakeholders to improve their work.

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Appendices

Appendix A: Informed consent

Dear Participant,

My name is Philangani Sibiyi. I am a Master's (Library and Information Science) candidate studying at the University of Zululand, KwaDlangezwa Campus. The title of the research is: 'The link between cataloguing and classification curriculum and job requirements.' The aim of the study is to investigate the link between what is taught at academic institutions and what is required by the employers.

I am interested in interviewing you so as to share your experiences and observations on the subject matter.

Please note that:

- The information that you provide will be used for scholarly research only.
- Your participation is entirely voluntary. You have a choice to participate, not to participate or stop participating in the research. You will not be penalised for taking such an action.
- Your views in this interview will be presented anonymously. Neither your name nor identity will be disclosed in any form in the study.
- The interview will take about one hour.
- The record as well as other items associated with the interview will be held in a password-protected file accessible only to me and my supervisors.
- If you agree to participate please sign the declaration attached to this statement (a separate sheet will be provided for signatures).

I can be contacted at: The Faculty of Humanities and Social Sciences, University of Zululand.

Contact Details:

Email: *nselelo93@gmail.com*

Cell: 0606640654

My supervisor is Mr. Mzwandile Shongwe who is located at the Faculty of Humanities and Social Sciences, University of Zululand.

Contact details:

Email: *shongwem@unizulu.ac.za*

Phone number: 0359026820

Thank you for your contribution to this research

Appendix B: Content analysis cataloguing and classification curriculum schedule

LIS schools	Course/degree offered	Purpose of the Course	Content/curriculum	Outcomes of the Course
DUT				
UCT				
UFH				
UKZN				
UL				
UNISA				
UWC				
UZ				

Appendix C: Content analysis schedule (instrument) for job advertisements

1. Title of job advert

.....
.....

2. Sector in which job has been advertised

.....
.....

3. Institution advertising the job

.....
.....

4. Educational requirements

.....

5. Skills, knowledge and attitudes required

.....
.....

6. Experience required

.....
.....

7. Job description (duties)

.....
.....

Appendix D: Interview

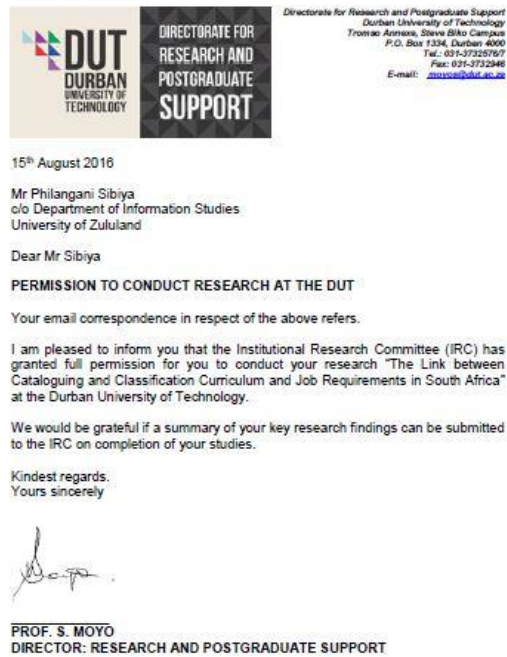


Interview schedule for cataloguers

1. Describe your day as a cataloguer.
2. How long have you been a cataloguer?
3. What qualifications do you have?
4. At what level did you learn cataloguing and classification at university and for how long?
5. Do you think that the time you spent learning cataloguing and classification at school was sufficient? Please explain.
6. What library materials do you catalogue?
7. Describe the tools that you use for cataloguing.
8. Could you describe the cataloguing process in this library?
9. Do you think that your academic qualification is sufficient for this kind of job? Please explain.
10. What skills and knowledge do you think are essential for cataloguers?
11. What training do you think a cataloguer must have?
12. Looking at the cataloguing and classification curriculum provided by LIS schools in SA, do you think they are sufficient for cataloguers. Please explain.
13. What challenges do cataloguers face in their job? How do you think they can be overcome?
14. Do you think the cataloguing profession does have a future?

Thank you for your co-operation.

Appendix E: Permissson letter from DUT Gatekeepers



Appendix F: Permission letter from UKZN Gatekeepers



11 August 2016

Ms Philangeni Sibiya (SN 2012Z9B14)
Department of Information Studies
Faculty of Humanities and Social Sciences
University of Zululand
Email: nselelo93@gmail.com

Dear Ms Sibiya

RE: PERMISSION TO CONDUCT RESEARCH

Gatekeeper's permission is hereby granted for you to conduct research at the University of KwaZulu-Natal (UKZN), towards your postgraduate studies, provided Ethical clearance has been obtained. We note the title of your research project is:

"The link between cataloguing and classification curriculum and job requirements".

It is noted that you will be constituting your sample by conducting interviews with staff members from the Library cataloging section of UKZN.

Please ensure that the following appears on your questionnaire/attached to your notice:

- Ethical clearance number;
- Research title and details of the research, the researcher and the supervisor;
- Consent form is attached to the notice/questionnaire and to be signed by user before he/she fills in questionnaire;
- gatekeepers approval by the Registrar.

Data collected must be treated with due confidentiality and anonymity.

You are not authorized to contact staff and students using 'Microsoft Outlook' address book.

Yours sincerely


MR S S MOKOENA
REGISTRAR

Office of the Registrar




Postal Address: Private Bag X54001, Durban, South Africa
Telephone: +27 (0) 31 260 8000/2200 Facsimile: +27 (0) 31 260 7824/2204 Email: registrar@ukzn.ac.za
Website: www.ukzn.ac.za


1910 - 2016

108 YEARS OF ACADEMIC EXCELLENCE

Pinetown | Grahamstown | Edgewood | Howard College | Mthetheni School | Pietermaritzburg | Richards Bay

Appendix G: Permission to collect data from uMngeni library

**Frances Callanan** <Frances.Callanan@durban.gov.za> 8/1/16 ☆  

to Khayelihle, me 

Hello Philangani

You now need to let us know how you want to proceed with your research.

The Ethekewini Municipal Library (EML) cataloguing department is divided into two sections, one at 99 Umgeni Rd in town and one in Pinetown.

There is a senior librarian at each of the sections. In town there are three cataloguing librarians and at Pinetown there are four. You will need to visit each section.

You have my mail address and telephone number. The senior librarian at Pinetown is Khaya Majola Khayelihle.majola@durban.gov.za 031-3116342.

Please contact us when you are ready to interview.

Regards
Frances

People (4)

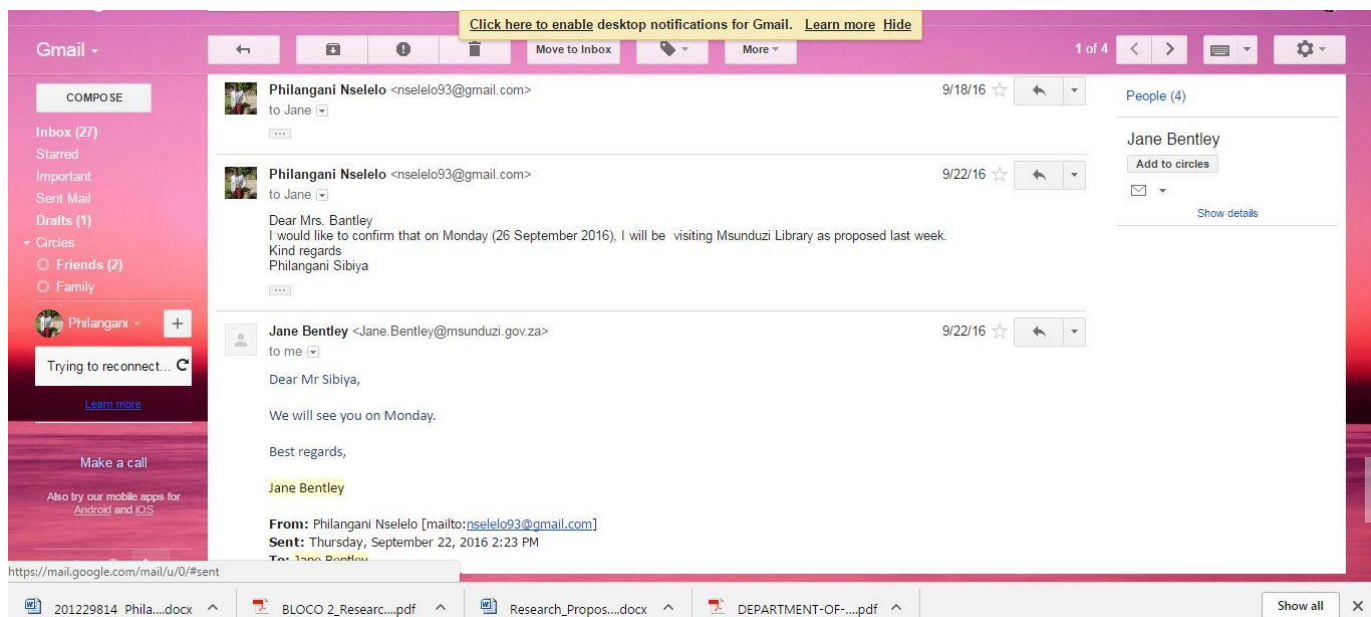
Thobela Ngidi

Add to circles



Show details

Appendix H: Permission to collect data from Msunduzi Library



Digital scholarship

How the LIS curriculum

Appendix I: Ethical clearance

**UNIVERSITY OF ZULULAND
RESEARCH ETHICS COMMITTEE**
(Reg No: UZREC 171110-030)



RESEARCH & INNOVATION

Website: <http://www.unizulu.ac.za>
Private Bag X1001
KwaDlangezwa 3886
Tel: 035 902 6887
Fax: 035 902 6222
Email: MangeleS@unizulu.ac.za

ETHICAL CLEARANCE CERTIFICATE

Certificate Number	UZREC 171110-030 PGM 2016/269									
Project Title	The link between cataloguing and classifications curriculum and job requirements									
Principal Researcher/ Investigator	PT Sibiya									
Supervisor and Co-supervisor	Mr. MM Shongwe									
Department	Information Studies									
Nature of Project	Honours/4 th Year			Master's		x	Doctoral			Departmental

The University of Zululand's Research Ethics Committee (UZREC) hereby gives ethical approval in respect of the undertakings contained in the above-mentioned project proposal and the documents listed on page 2 of this Certificate.

Special conditions:

- (1) This certificate is valid for 2 years from the date of issue.
- (2) Principal researcher must provide an annual report to the UZREC in the prescribed format [due date-31 July 2017]
- (3) Principal researcher must submit a report at the end of project in respect of ethical compliance.

The Researcher may therefore commence with the research as from the date of this Certificate, using the reference number indicated above, but may not conduct any data collection using research instruments that are yet to be approved.

Please note that the UZREC must be informed immediately of

- Any material change in the conditions or undertakings mentioned in the documents that were presented to the UZREC
- Any material breaches of ethical undertakings or events that impact upon the ethical conduct of the research

Classification:

Data collection	Animals	Human Health	Children	Vulnerable pp.	Other
X					
Low Risk		Medium Risk		High Risk	
		X			

The table below indicates which documents the UZREC considered in granting this Certificate and which documents, if any, still require ethical clearance. (Please note that this is not a closed list and should new instruments be developed, these would require approval.)

Documents	Considered	To be submitted	Not required
Faculty Research Ethics Committee recommendation	X		
Animal Research Ethics Committee recommendation			X
Health Research Ethics Committee recommendation			X
Ethical clearance application form	X		
Project registration proposal	X		
Informed consent from participants	X		
Informed consent from parent/guardian			X
Permission for access to sites/information/participants	X		
Permission to use documents/copyright clearance			X
Data collection/survey instrument/questionnaire	X		
Data collection instrument in appropriate language		Only if necessary	
Other data collection instruments		Only if used	

The UZREC retains the right to

- Withdraw or amend this Certificate if
 - Any unethical principles or practices are revealed or suspected
 - Relevant information has been withheld or misrepresented
 - Regulatory changes of whatsoever nature so require
 - The conditions contained in this Certificate have not been adhered to
- Request access to any

The UZREC wishes the researcher well in conducting the research


Professor Nokuthula Kunene
 Chairperson: University Research Ethics Committee
 26 July 2016

PT Sibiya - PGM 2016/269

CHAIRPERSON
 UNIVERSITY OF ZULULAND RESEARCH
 ETHICS COMMITTEE (UZREC)
 REG NO: UZREC 171110-30

26-07-2016

RESEARCH & INNOVATION OFFICE

