Afr. J. Lib. Arch. and Inf. Sc. Vol. 30, No. 2 (October 2020) 197-219

Knowledge and Skills Requirements of National University of Lesotho Librarians in Meeting Information Needs of Humanities Undergraduate Students in the Digital Age

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Abstract

Digital age has transformed higher education and this has affected the roles of academic libraries as well. The digital age, in the context of this study, refers to an era where information management services such as organisation, management, retrieval, and transfer of information are done primarily by using computers and other technology devices. In this era, contemporary technologies such as social media, the Internet and other technology tools have become the driving forces in the dissemination and communication of information (Schmidt and Cohen, 2013; Tella, Akande and Bamidele, 2018). Academic librarians are under pressure since they need to embrace and adapt to technological changes in order to meet users' needs. This study was conducted to ascertain the knowledge and skills requirements of librarians in the digital era academic library environment, in the context of Lesotho, using the case study of the National University of Lesotho (NUL). Convergent parallel mixed methods approach within a pragmativist paradigm and case study design informed the methodology. The target population included NUL librarians and humanities undergraduate students. Data were collected via face-to-face semi-structured interviews with librarians and a structured questionnaire for students. The study concludes that a blend of disciplinary, generic and personal competencies is required for librarians to meet the library related information needs in the current digital age.

Keywords: *Academic Libraries, Digital Era, Disciplinary Knowledge, Generic Skills, Personal Competencies*

Introduction

The library and information services (LIS) profession has been changing rapidly due to technological advancements, globalisation and digitisation of information. Technology has transformed higher education (Ogunsola, 2011) and this has affected the roles of academic libraries as well. In concurring, Tella, Akande and Bamidele (2018) emphasised that the growth of ICTs has 'revolutionised' almost every human activity in libraries and has impacted enormously in their operations and services (Rifaudeen, 2015). Academic librarians under pressure since they need to embrace and adapt to the LIS landscape in order to meet users' needs. According to Raju (2014) the 'dramatic' changes effected by technology in the traditional academic library have greatly impacted on the knowledge and skills of LIS professionals working in the digital environment. New demands have emerged, and hence a need for a highly skilled workforce and the adoption of skills and competencies to meet the dynamic needs of users (Gerolimos and Konsta, 2008; Smith, Hurd and Schmidt, 2013). In fact, because of the changing skills requirements, librarians, according to Mathews and Pardue (2009), are morphing to

information technology (IT) specialists. Tella, Akande and Bamidele (2018) in supporting Pardue stressed that ICT knowledge and skills is a requirement for recruitment of librarians. Technology has changed librarians' roles and influenced the way the services and collections of academic libraries are utilised, and hence the reinvention of more traditional posts and the creation of new job roles by academic libraries (Goetsch, 2008).

Several studies on the LIS job market, and LIS education and training have been conducted globally to identify the relevant knowledge and skills competencies required in digital academic libraries. Some have been conducted globally in countries such as Australia (Haddow, 2012), India (Sarasvathy, Nambratha and Giddaiah, 2012), Israel (Bronstein, 2015), Malaysia (Hashim and Mokhtar, 2012), Pakistan (Ansari, 2011), United Kingdom (Orme, 2008), and the United States of America (Blakiston, 2011; Nonthacumjane, 2011). Some of these studies have been done in the African continent and include studies in the African university libraries context by Chiware (2007), in Kenya (Kavulya, 2007), in Nigeria (Ezema, Ugwuanyi and Ugwu, 2014; Emiri, 2015; Madu, Aboyade and Ajayi, 2018), in South Africa (Fourie, 2004; Ocholla and Shongwe, 2013; Raju, 2014; Raju, 2016) and in Sudan (Magara, 2010). The findings of these studies reveal that personal skills, generic skills and discipline-specific knowledge are generally the three major categories of knowledge and skills requirements for the digital age academic library. Skills such as interpersonal, communication, adaptive, leadership, information technology and many others fall within these three broad categories. In addition, today's digital skills needed for librarians include but are not limited to "trendspotting and implementation, website management, creating online instruction materials, technology assessment, social media/web 2.0/ outreach, technology training for both staff and patrons, electronic resource management, it/ systems, digital initiatives, electronic resource and online reference" (Radniecki, 2013).

The findings of the above African context studies further indicate that education and training are critical for the acquisition of required knowledge and skills by LIS professionals. Therefore, LIS (Library and Information Science/Studies) schools should regularly review and revise curricula in order "to meet the challenges of the new knowledge and skill requirements of the digital age academic library" (Raju, 2014). Mathews and Pardue (2009) emphasise that curricula should prepare librarians to adapt to technology and embrace ICTS. Tella, Akande and Bamidele (2018) too, stressed that librarians should integrate technologies into library practices in order to render services satisfactory to the digital age library users. The literature indicates that LIS training is critical in addressing the challenges brought by technological changes in academic libraries. Evolving technologies have ushered changes in the traditional academic library environment and this has in turn created gaps in LIS professionals' skills sets. Hence the significance of training and up-skilling in order for academic libraries, such as that of the National University of Lesotho, to remain relevant in the digital age. Change is inevitable and should be adapted to rather than rejected.

Background to the study

The National University of Lesotho (NUL) is a higher institution of learning in Roma, Lesotho. Lesotho is an independent country located in southern Africa and completely landlocked by the Republic of South Africa. NUL was established in 1945. Currently the university comprises of seven faculties that offer both postgraduate and undergraduate programmes. The total number of students that enrolled for the academic year 2015/2016 was 9,544. There were 9,367 undergraduates and 177 postgraduates (National University of Lesotho, 2016). The Faculty of Humanities, which was the focus of this study, has eight academic departments with 55 academic staff and three non-academic staff, and a total student number of 1,016; that is, 998 undergraduates and 18 postgraduates, at the time of the study being conducted (National University of Lesotho, 2016). NUL has a library named the Thomas Mofolo Library, located on the main campus in Roma.

The NUL Library was established in 1954 as a college library. It became a 'fully-fledged' university library in 1964 when it was named after Thomas Mofolo (a Mosotho author, who wrote mostly in the Sesotho language). The NUL Library comprises of the main library; the law library; the Archives, Records Management, Museum and Documentation Division (AREMDOD), all located on the Roma campus; and, a branch library at the Institute of

Extra-Mural Studies (IEMS) in Maseru, which is the capital of Lesotho. This branch library provides services primarily to part-time students and lecturers (National University of Lesotho, 2016).

The library had only two qualified (professional) librarians at its beginning as a university library in 1954. It now has 39 staff members, including professional and support staff (National University of Lesotho, 2016). However, this may not be considered as a significant growth when seen in the context of the number of decades since its establishment (National University of Lesotho, 2006). According to the National University of Lesotho (2006) the quality of NUL Library services is not only located in the number of employees but also in the quality of individual staff members and most importantly, in their professional qualifications and personal qualities applied when executing their duties. Technological changes have no doubt impacted on the knowledge and skills requirements of academic librarians in this academic library as well. Hence, the importance of this study as it assisted in ascertaining the impact of such technological changes on the knowledge and skills competencies of NUL librarians.

Research Problem

The changing academic library landscape, driven largely by rapidly evolving information and communication technologies (ICTs), has led to librarians adapting to changes in order to meet users' needs. Rapidly evolving technologies have changed academic librarians' job descriptions as their roles and functions have also changed (Goetsch, 2008; Ogunsola, 2011; Madu, Aboyade and Ajayi (2018). However, Fourie (2004) and Rifaudeen (2015) cautioned that while librarians might be aware of their competency deficiencies in this fast changing digital information environment, they might be incapable of repositioning themselves in time for the service to meet users' needs.

At about the same time, Weech (2005) observed that, ''we do not know much about what skills are needed for professionals who work as digital librarians". This statement, although somewhat dated, is nevertheless still an indication that fast evolving technology makes it complex for LIS professionals to readily identify 'required' skills and competencies appropriate for the digital academic library environment. Itsekor and James (2012), more recently, undertook a study in Nigeria to ascertain the "digital literacy skills" of academic librarians and found that they lacked appropriate skills to use computers. The inadequacy of computer literacy skills pauses a challenge for them to provide, maintain and manage the influx of digital information resources. Itsekor and James (2012) also indicated that academic librarians in their study were "not encouraged to develop themselves", thus signalling another major challenge of change in organisations.

The digital academic library will always require a new type of a professional equipped with 'better' knowledge, skills and who is 'broadly educated' (Partridge et al., 2010). This becomes a problem in developing countries like Lesotho where most academic libraries are very under-staffed and majority of staff members are not qualified librarians (that is, they do not possess a professional LIS qualification). The researcher made this assertion based on personal experience as a Lesotho national with experience of NUL and its academic library by virtue of having used the library and interacted with its library staff.

The literature is clear that academic libraries all over the world are encountering challenges with regard to changes brought by rapidly evolving ICTs (Rifaudeen, 2015; Madu, Aboyade and Ajayi, 2018; Tella, Akande and Bamidele, 2018). The NUL Library would be no exception; the situation is aggravated by its developing African context. Therefore this study, using a humanities undergraduate context, sought to address the issue of the knowledge and skills requirements of NUL librarians in this technology-driven, rapidly evolving academic library landscape. The study also sought to address related issues of how NUL librarians were adapting to this changing environment, and the type of education and training needed for this environment. The type of training required could be acquired through formal, informal, in-service training and continuing education programmes, which encompass on-the-job and off-the job training; with formal education delivered via short courses, lectures and seminars, and informal training via workshops, conferences and through individuals such as colleagues (Blakiston, 2011; Ezema, Ugwuanyi and Ugwa, 2014; Emiri, 2015).

Objectives of the Study

The broad objective of this study was to ascertain what knowledge and skills are required for NUL librarians in order to meet the information needs of humanities undergraduate students in the digital era academic library environment. This study therefore sought to address the following research questions:

- What are the library related information needs of NUL humanities undergraduate students in the current digital age?
- What knowledge and skills are required of NUL librarians in meeting the library related information needs of humanities undergraduate students in the current digital age?
- To what extent has technology affected the roles and functions of NUL academic librarians?
- To what extent are NUL librarians readily adapting to and embracing technological changes affecting academic library resources and services?
- What type of education and training are required for NUL librarians to effectively meet the information needs of humanities undergraduate students in the digital age academic library environment?

Literature Review

The reviewed literature shows that some of the identified key concepts or themes on knowledge and skills requirements in the digital era academic library environment include discipline-specific knowledge, generic skills and personal competencies. The literature also reflects on the impact of evolving technology on LIS professionals' roles and functions and on how education and training in LIS and related fields could contribute to growing knowledge and skills to meet LIS workplace demands (Burnett, 2013). Organisational learning theory was found suitable in supporting this study to ascertain knowledge and skills requirements of NUL librarians in the digital age; and also in addressing the problem of evolving ICTs at the NUL Library, which required librarians to adapt to changes (and make evidence-based decisions) in order to meet users' needs.

The Academic Library in the Digital Era

ICTs have changed the traditional academic library immensely thus affecting the knowledge and skills requirements for librarians operating in the digital environment (Raju, 2014). In support, Patel (2012) too claims that technology has changed the nature of academic libraries and the roles they play. The impact of digital technology (Campbell, 2006) has brought about significant changes in the nomenclature roles, competencies and skills of digital librarians (Myburgh and Tammaro, 2013). Hence the need for academic libraries in the digital environment to embrace "digitisation, electronic publishing, Web 2.0, Web 3.0, Library 2.0, Library 3.0, social media, open access, and a host of other fast evolving ICTs" (Raju, 2014: 164).

Information Needs in Digital Academic Libraries

Information may also be required to formulate ideas or create new knowledge (Shenton and Dixon, 2004). Cooke (2012) opines that the expansion and change in librarianship with evolving technologies has led to the emergence of various patron groups with more intricate information needs. Therefore, librarians should adapt to evolving needs of users (Patel, 2012). Communication skills are critical since they enable academic librarians to articulate and probe information needs of users as they (librarians) tend to be reluctant in keeping in touch with patrons and end up not knowing them as they should (Nicholas and Herman, 2009). According to Bopape et. al. (2017) the needs of students in the digital era include reading space, access to internet, teaching, learning and research information. They further indicate that needs are often vague and complex and depend on the situations in which people find themselves. This study focused on knowledge and skills competencies required by academic librarians to assist undergraduate students to identify when there is a gap in their knowledge and to meet their information needs to fill this gap.

Knowledge and Skills Requirements in the Digital Academic Library

According to the Association of College and Research Libraries (ACRL) (2006), librarians operating in the digital environment must possess competencies that "comprise a different mix of skills". Studies by Orme (2008) in the United

Kingdom and Haddow (2012) in Australia found that a mixture of professional, generic and personal skills is a requirement for LIS professionals. In agreeing with the "mixture" of skills required, Choi and Rasmussen also found that "digital librarians must possess the necessary core knowledge and skills of a traditional profession as well as new technological knowledge and managerial skills" (2009). An exploratory study conducted by Raju (2014) in South Africa using content analysis of job advertisements and interviews, too revealed that a "blend of discipline-specific knowledge, generic skills and personal competences" are required for LIS professionals working in digital era academic libraries.

Discipline-Specific Knowledge

Discipline-specific knowledge, also referred to as professional knowledge (Raju, 2016), 'content knowledge' or 'subject matter expertise' (Partridge and Hallam, 2004) and often inclusive of discipline-specific skills, is defined as "knowledge which is learned in the LIS programmes in both undergraduate and postgraduate levels" (Nonthacumjane, 2011); and as a result an imperative for LIS employers (Raju, 2014). Metadata, content management, digital curation, digitisation and preservation, user needs and collection development have been identified by Raju (2016) as some of the essential discipline-specific knowledge for LIS professionals. According to Raju (2014) cataloguing and classification, which have existed since the inception of the discipline of library and information science, are competencies still required in digital libraries for knowledge organisation and retrieval. Choi and Rasmussen (2009) point out that core knowledge and skills of traditional librarianship are essential in the digital academic library environment but they must be supplemented by the new technological knowledge and managerial skills.

As a result of technological advancements, there are emerging trends such as digital curation, research data management and research librarianship, to mention but a few, that are challenging academic libraries in the digital era (Raju, 2014). As such, professional skills are required in academic libraries to develop tools, portals and customise strategies for precision research on the massive web (Campbell, 2006). Hence, discipline-specific knowledge becomes a necessity in academic libraries, especially in research-oriented areas. It would seem that regardless of the new technologies that societies use to access information, LIS professionals would always be required to contribute using their professional knowledge.

Generic Skills

According to Orme (2008) generic skills encompass personal, managerial, information technology and other profession related skills that allow people to work not only in disciplinary areas but also in other social situations (Raju, 2014). Generic skills are also referred to as life skills, for example, communication and interpersonal skills, critical thinking, problem solving and teamwork or "transferrable skills" or "graduate attributes" (Partridge and Hallam, 2004). Generic skills "complement the discipline specific skills and professional knowledge acquired by students through their university study" (Partridge and Hallam, 2004), and are hence required in the rapidly changing academic library environment. It is critical for the success of libraries in the digital age to employ LIS professionals who are "vibrant" and equipped with generic skills rather than just discipline-based skills (Missingham, 2006). General computing or computer literacy such as information literacy and technology skills are generic skills (Raju, 2014) required to provide information services expected by users in the digital academic library environment. LIS professionals in Africa, where this study was conducted, require generic skills to cope with the rapid changes in the digital era (Chiware, 2007). The literature suggests that although generic skills are very important in the digital information environment, they do not displace the professional skills that are still valued in the LIS workplace (Sreenivasulu, 2000; Partridge and Hallam, 2004; Missingham, 2006; Orme, 2008; Nonthacumjane, 2011). This means that as much as generic skills are highly required in the digital academic libraries, they are not the core disciplinary skills but they do augment professional skills (Riley-Huff and Rholes, 2011).

Personal Competencies

Personal skills are defined by Nonthacumjane (2011) as "appropriate attitudes, values and personal traits".

The literature reveals that librarians of the 21st Century require a wide range of skills inclusive of behavioural or personal competencies (Sreenivasulu, 2000; Shibanda, 2001; Missingham, 2006; Knight, 2009; Partridge et al., 2010; Nonthacumjane, 2011; Shongwe and Ocholla, 2012; Ezema, Ugwuanyi and Ugwu, 2014). Contemporary LIS professionals require personal skills such as creativity, flexibility, reflectibility, adaptability, detective-like, ability to deal with variety of users, responsive to peoples' needs, enthusiastic and self-motivated (Nonthacumjane, 2011).

The literature indicates that discipline-specific knowledge, generic skills and personal attributes are the core competencies required in the LIS profession. Hence a need for LIS professionals that are "multi-skilled" (Raju 2014). The NUL Library too needs to display this multi-skilled feature in order for its librarians to mediate a technology-driven and rapidly evolving higher education information landscape. While discipline-specific knowledge (and skills) seems relevant in the digital academic library, it must be supplemented with generic skills and personal competencies to meet the dynamic and complex needs of users in the fast changing academic library landscape. Thus, the three categories of knowledge/skills (disciplinary, generic and personal) have emerged in the literature as job requirements in a digital age academic library. They are needed, *inter alia*, to adapt to technological changes affecting academic libraries such as the NUL Library.

Methodology

The study adopted a pragmativist paradigm, allowing it to draw from both qualitative and quantitative philosophical assumptions (Creswell, 2014). A case study design was employed to investigate the problem which this study addressed. This study employed a "convergent parallel mixed method" approach (Creswell, 2014), using both quantitative and qualitative data collection methods. Data were collected via use of a structured questionnaire for probability random sampled students and face-to-face semi-structured interviews for purposively sampled NUL librarians in different positions within various departments and units of the library. Interviewees were selected based on the researcher's prior knowledge of the NUL librarians. Data were collected, at roughly the same time, and analysed separately, but then integrated in the interpretation of overall findings (Creswell, 2014). The target population of study comprised of NUL librarians and humanities undergraduate users of the NUL Library.

The total population of professional NUL librarians at the time of study was 35. Only 28 were available at the time of data collection (October 2016) as the rest (seven) were on study leave (NUL Library, personal communication 2016, July 27). From these 28 professional librarians, 13 were purposively selected for interviews: the Director of the NUL Library, three section managers and three librarians at operational level in each section. This selection (which was representative of all positions within the library) was based on the fact that case studies focus on intensive and in-depth "specific unit[s] of analysis", and hence they generally require a much smaller sample size because large samples can reduce their effectiveness (Yin, 2014). So 28 was quite a bigger number. Random sampling was employed to obtain quantitative data for the study. It was further narrowed down to stratified random sampling. In 2016 NUL had a total population of 998 humanities undergraduate students (National University of Lesotho, 2016). This study excluded 6,034 undergraduate students from other faculties and 177 postgraduate students, as the focus of this study was on NUL humanities undergraduate students because it was convenient for the researcher (as a humanities student) to conduct the study with this faculty.

The Survey System Software Web tool (Creative Research System 2012) was used to calculate the sample size and confidence interval for the population of NUL humanities undergraduate students: a sample of 278 was calculated from the population of 998 students, with a confidence level of 95% and sampling margin of error of 5%. The researcher used the sample size table developed by Research Advisors (2006) to verify the accuracy of the online calculator and it recommended the same figure. As a result, a sample of 278 humanities undergraduate students was chosen to participate in the study. The random sampling was further narrowed down to stratified random sampling to ensure that all strata among humanities undergraduate students were represented in the selected sample. The different strata included age, year of study, programme of study and department.

Data was collected for the period of a month (5 October to 28 October 2016). The entire data analysis process was done 'by hand' so that the researcher could develop a greater understanding of the data collected in order to 'make sense' of the data (Travis, 1999). The results were tabulated according to frequency distributions, using *Microsoft Excel*. Tables 1, 2 and 3 present the three categories of competencies: discipline-specific knowledge and skills, generic skills and personal attributes that emerged as the core competencies required by LIS professionals in the digital age academic library to meet users' evolving information needs with frequency counts from highest to lowest.

Findings and Discussion

On the question, "what are the library related information needs of NUL humanities undergraduate students in the current digital age?" the findings revealed that NUL humanities undergraduate students needed information mostly for completion of coursework assignments, practical's and projects and for preparation for tests and examinations among others. This finding was supported by findings from interviews with NUL librarians with a large number who indicated that assignments and projects were the main purposes for which students have a need for information from the NUL Library. The findings are presented in Table 1.

Table 1: Purposes for which humanities undergraduate students need information from the NUL Library

Library related information needs identified by students (N=202)	**Frequency**	**Percentage**
Coursework assignments, practical and projects	149	74%
Preparation for tests and examinations	140	69%
Course work reading requirements	100	50%
To learn how to locate information sources and resources using the library website	78	38%
Guidance on bibliographic referencing	77	38%
To learn how to use information database and other electronic information resources	69	34%
Tutorials, seminars and workshops	24	115
Librarians' views on library related information needs (N=13)		
Information for assignments	10	77%
Information for research projects	9	69%
For general reading/knowledge purposes	5	38%
Preparation for tests	3	23%
For leisure reasons	3	23%
For exam preparation	1	8%

To address the research question, "what knowledge and skills are required of NUL librarians in meeting the library related information needs of humanities undergraduate students in the current digital age?" the findings revealed relevant subject knowledge for information seeking purposes, plagiarism and how to avoid it and understanding information needs of library users as the top LIS disciplinary knowledge sets required of NUL librarians. The majority of librarian respondents identified information literacy training and above 50% identified information management and processing (for example, cataloguing, classification, abstracting, indexing) as the top most disciplinary knowledge sets required; showing the enduring importance and relevance of traditional LIS knowledge sets in the digital age (Mathews and Pardue, 2009). In terms of disciplinary skills, students surveyed indicated that information finding skills and the ability to use technology to deliver effective library services are critical LIS disciplinary skills, amongst other technology related disciplinary skills, required of NUL librarians.

Findings further revealed that the ability to teach students to do online searching, reference management software skills and information retrieval skills (print and electronic) were at the top of the list of disciplinary skills required of NUL librarians mentioned by interviewees. In comparing disciplinary knowledge and skills identified by student respondents to the ones identified by interviewed librarians, based on the high frequency scores, it would seem that librarians' knowledge of information literacy training and ability to teach students to do online searching could have influenced the high frequencies in the disciplinary knowledge and skills requirements identified by student respondents. There seemed to be some correlation with important disciplinary knowledge and skills sets between the views of surveyed students and interviewed librarians. Tables 2, 3, 4 and 5 present the findings.

Table 2: LIS disciplinary knowledge requirements identified by student respondents (N=202)

Disciplinary knowledge requirements	Frequency	Percentage
Relevant subject knowledge for information searching purposes (e.g. theology)	113	56%
Plagiarism and how to avoid it	105	52%
Understanding information needs of library users	103	51%
To learn how to locate information sources and resources using the library website	78	38%
Knowledge of new technologies for information access and communication (e.g. tablets)	94	47%
Relevant Library and Information Science (LIS) qualification	76	38%
Library rules and procedures	70	35%
Knowledge of information databases (general or subject specific)	67	33%
Reference management software (e.g. Refworks)	55	27%
Other	2	1%

Table 3: LIS disciplinary knowledge requirements identified by librarian respondents (N=13)

Disciplinary/professional knowledge	Frequency	Percentage
Information literacy training (library orientation, user education, instruction, etc.)	11	85%
Information management and processing (e.g. cataloguing, classification, abstracting, indexing)	10	77%
Knowledge of electronic journals	6	46%
Knowledge of online databases	5	38%
Knowledge of the acquisition process	4	31%
User studies (knowledge of users and their information needs)	4	31%
Knowledge management (e.g. creation, storage, sharing)	3	23%
Relevant subject knowledge (e.g. education, law, computer science)	3	23%
Records and archives management (e.g. creation, collection, storage, retention, retrieval, appraisal, disposal)	3	23%
Digital curation and preservation	3	23%
Knowledge of library automation	2	15%
Knowledge of citation and plagiarism	2	15%
Collection development (print and electronic)	1	2%
Knowledge of database management systems	1	8%
Knowledge of organising and processing online materials	1	8%
Understanding copyright laws and licensing	1	8%
Information repackaging (selective dissemination of information)	1	8%
Knowledge of reference management software	1	8%
Knowledge of library policy (rules and regulations)	1	8%
Library operations (knowledge of each section's functions and responsibilities)	1	8%
Knowledge of publishing	1	8%

Table 4: LIS disciplinary skills requirements identified by librarian respondents (N=13)

Disciplinary/professional Skills	Frequency	Percentage
Ability to teach students to do online searching	7	54%
Reference management software skills	7	54%
Information retrieval skills (print and electronic)	6	46%
Competency in using the library information management system to acquire, process and manage electronic resources	4	31%
Referral skills (attend to queries and refer where necessary without wasting users' time)	2	15%
Skills to catalogue manually	1	8%
Ability to evaluate e-resources	1	8%
Familiarity with the physical collection and its arrangement	1	8%

Table 5: LIS disciplinary skills requirements identified by student respondents (N=202)

Disciplinary skills requirements	Frequency	Percentage
Information finding skills (online and print sources)	141	70%
Ability to use technology in various forms to deliver effective library services,	137	68%
Ability to search electronic information databases and journals	116	57%
Internet searching skills	99	49%
Bibliographic referencing skills (e.g. using Refworks)	92	46%
Other	2	1%

The findings also revealed that communication skills emerged as the most required generic skills set for NUL librarians among both surveyed students and interviewed librarians. NUL librarians interviewed emphasised that communication was 'key' in an academic library environment, and that without it there was "no way" librarians would meet the ever changing students' information needs. The findings corroborate studies by Gerolimos and Konsta (2008); Orme (2008); Partridge, Lee and Munro (2010); Nonthacumjane (2011) which repeatedly reflected communication skills as a commonly sought generic skill among librarians (Orme 2008). Librarian and student respondents alike placed general computer literacy as the second most required generic skills set for NUL librarians at 64% (131 out of 204 students) and around slightly above 75% for librarians, respectively. Other generic skills identified by librarians and students as being critical for LIS professionals include Listening skills and Interpersonal skills. Online teaching skills, Customer service, Marketing skills, Management skills, teaching [and training] skills, Social media skills also notched up noteworthy frequency counts.

Table 6: Generic skills for librarians identified by student respondents (N=204)

Generic Skills	Frequency	Percentage
Communication skills	134	66%
General computer literacy	131	64%
Online teaching skills	92	45%
Customer service	90	44%
Teaching and training skills	82	40%
Listening skills	81	40%
Interpersonal skills	74	36%
Referral skills	63	31%
Learner focus	62	30%
Social media skills	51	26%
Other	2	1%

Table 7: Generic skills identified by librarian respondents (N=13)

Generic skills	Frequency	Percentage
Communication skills (oral and written)	11	85%
Computer literacy	10	77%
Listening skills	9	69%
Interpersonal skills	7	54%
Marketing skills	6	46%
Management skills	5	38%
Teaching skills (ability to train students)	5	38%
Social media skills	5	38%
Leadership skills	4	31%
Customer care skills	4	31%
Public relations skills	4	31%
Professional ethics	3	23%
Interpersonal relations	2	15%
Problem solving skills	2	15%
Basic research skills	2	15%
Collaborative skills	1	8%
Teamwork skills	1	8%
Presentation skills	1	8%
Counselling	1	8%
Safety skills (ability to use first aid kit, fire extinguishers, etc.)	1	8%

Furthermore, the findings revealed that having good general knowledge (141) out of 205 or 69%), as the outstanding personal attribute identified for their librarians by student respondents. It would seem that students need librarians equipped with a broad base of knowledge and 'ever ready' to attend to all their queries, including general ones and not only library related queries. Librarians interviewed, however, placed being friendly and welcoming at the top of their list of required personal traits. Student and librarian respondents also identified behavioural traits such as patience, reliable, responsive to others' needs and being flexible for contemporary LIS professionals practising in the digital age academic library. In Haddow's (2012) study, adaptability was identified as one of the crucial personal attributes required for LIS professionals in the digital age academic library environment. It was disappointing to note that none of the librarian respondents brought up adaptability as a required personal attribute despite the emphasis by organisational learning theory that adaptability is critical and relevant in a changing environment (Marquardt, 1996).

Table 8: Personal attributes for librarians identified by student respondents (N=205)

Personal attributes	Frequency	Percentage
Good general knowledge	141	69%
Patience	126	62%
Reliable	116	57%
Responsive to others' needs	113	55%
Flexible	112	56%
Passion for technology	94	46%
Interpersonal skills	74	36%
Dedicated	82	40%
Empathetic	47	23%
Other	9	4%

Table 9: Personal attributes identified by librarian respondents (N=13)

Personal attributes	Frequency	Percentage
Friendly and welcoming	8	62%
Humble	5	38%
Enthusiastic (show interest and willingness to assist)	5	38%
Caring about the needs of others	4	15%
Patience	3	23%
Polite	3	23%
Respectful	3	23%
Confidence	2	15%
Calm	2	15%
Creative	1	8%
Proactive	1	8%
Flexible	1	8%
Ethical	1	8%

With regard to research question "to what extent has technology affected the roles and functions of NUL academic librarians?" the findings revealed that a significant 53% of student respondents indicated both online information databases and the computerised catalogue as the most recognised new technology introduced into the services of the NUL Library. It was very evident from the findings that rapidly evolving ICTs have affected the roles and functions of NUL librarians. Interviewed librarians confirmed that NUL Library has incorporated technology into its service and resource offerings. All interviewed librarians were emphatic that technology has affected their roles and functions but both in positive and negative ways. One librarian respondent stated that although technology had brought "much confusion" in libraries, it is important and required in the digital age academic library to meet the information needs of students. Student respondents concurred with librarian respondents on the positive impact of technology on the roles and functions of librarians. It seemed that technology has significantly affected the roles and functions of NUL academic librarians, as perceived by both students and librarian respondents, whether positively or negatively.

Table 10: Impact of technology on the roles and functions of librarians as identified by student respondents (N=187)

Impact of technology	Frequency	Percentage
Online information databases	99	53%
Computerized catalogue	99	53%
Electronic journals	75	40%
Online user education	59	32%
Online reference services	46	25%
Reference management tools	24	13%
Social media notifications	20	11%
Other	1	1%

Table 11: Impact of technology on the roles and functions of librarians as identified by librarian respondents (N=13)

Impact of technology on roles and functions of librarians (responses)	Frequency	Percentage
Library automation – move from card catalogues to online public access catalogue (OPAC)	8	62%
Technology has made it easy to execute daily functions such as issuing, returning, searching and locating information sources	8	62%
Librarians need to acquire more training on ICTs to be functional in the digital era	5	38%
Improved library operations. Services are faster, more accurate and efficient (e.g. cataloguing, online acquisition, etc.)	4	31%
Librarians have become teachers because they are now required to train and demonstrate to the users (e.g. undergraduate students) how to access information sources and resources using new technology	3	23%
Evolving technology has forced the library to digitize and preserve archive materials and special documents so that they are available in digital format for easy access and for posterity	2	15%
Technology has led to the establishment of an institutional repository to publish and preserve NUL's intellectual output	1	8%
NUL librarians are required to acquire ongoing technological training to adapt to changes but some decided to retire because they found it hard to change from traditional systems.	1	8%
Librarians liaise with faculties and inform them of any changes in the library resulting from evolving technology so that faculties understand what is happening in the library	1	8%
There is much confusion brought by technology even though it is important and required	1	8%
Services such as current awareness have improved because of digital communication as they are now reach a wider audience.	1	8%
Technology has divided students and librarians because students prefer to use their own devices rather than come into the library	1	8%
Because of rapid changes brought about by technology, some librarians are left behind as it is difficult to cope with the pace at which technology changes	1	8%
Technology has made staff redundant and idle because it has lessened their workload	1	8%
Librarians cannot completely adapt to the new environment because they have to combine both traditional and digital methods to provide services	1	8%

On the question, "to what extent are NUL librarians readily adapting to and embracing technological changes affecting academic library resources and services?" findings revealed that the majority of students were uncertain as to whether NUL librarians were readily embracing technological change in the delivery of resources and services to humanities undergraduate students. It was encouraging that many of the librarians interviewed (8 out of 13) highlighted willingness of staff to attend training on evolving technology, an indication of the readiness to embrace change. This readiness was reinforced by the following comment by an interviewed librarian: "There is no way they [NUL librarians] cannot accept technology because nowadays everything is electronic. They are adapting to the digital era". At the same time, there were some uncertainties among NUL librarians as four of 13 librarians presented mixed views and one in the negative on this issue of adapting to technological changes. One interviewee indicated that "it is hard to say whether they [NUL librarians] are accepting or resisting because technology is there and they have no option but to catch up with the changes". Another interviewee revealed that "some decided to retire from work because of technological changes and the fear of the unknown". In other words, they were not able to adapt to the technological changes. This mixture of responses from the librarians on whether NUL librarians are embracing and adapting to technological changes could explain the uncertain perception among the students – yet a further indication of more work that needs to be done by the NUL Library to readily embrace change in order to overcome the challenges of a rapidly changing environment (Marquardt, 1996). Findings are reflected in table 12.

Table 12: Librarian respondents' views on NUL librarians adapting to technological changes (N=13)

Response	Explanations for response	Frequency	Percentage
Yes	Willingness of staff to attend training on evolving technology	8	62%
	When the system is down, staff do not provide services using the manual system but rather wait until the problem is resolved	7	54%
	When students enquire about information, librarians do not only tell them about print materials but also show them how to use e-resources (e.g. exam papers available in digital format)	6	46%
	Librarians use computers to do most duties (e.g. catalogue, classify, order, locate, issue, returns)	6	46%
	The library engages IT specialists whenever the system fails or shuts down. There are IT specialists on standby to assist with technological problems	4	31%
	Librarians train students to become part of the digital change taking place in the library	3	23%
	The library has recently upgraded its information management system and purchased a technologically advanced system to meet users' needs	2	15%
	Digitization of archives section of the library	2	15%
	Advertisements and announcements of library services are done through online collaborative and learning environment that supports the academic community in teaching, learning and research	2	15%
	Implementation of Wi-Fi network in the library as a way of encouraging students to frequently come to the library for online services and queries.	1	8%
	Opening of two Internet cafès inside the library (one uses cable network and the other is a 24 hours service that uses only Wi-Fi)	1	8%
	"There is no way they [NUL librarians] cannot accept technology because nowadays everything is electronic. They are adapting to the digital era."	1	8%
Partly yes partly no	"They [NUL librarians] seem ready to move with changes but there are those who are resisting because they feel technology is side-lining them."	1	8%
	"They [NUL librarians] are accepting it but there are those who don't seem keen to learn more about these changes."	1	8%
	"It is hard to say whether they [NUL librarians] are accepting or resisting because technology is there and they have no option but to catch up with the changes."	1	8%
	"They [NUL librarians] might be resisting, not because they do not want technology but because of the way it is introduced to them. The approach is not good."	1	8%
No	"Some decided to retire from work because of technological changes and the fear of the unknown."	1	8%

The findings also revealed the lack of or insufficient training, coping with rapid changes, shortage of staff and insufficient modern equipment as some of the challenges of embracing technology at NUL Library. Buarki, Hepworth and Murray (2011), identified coping with change as one of the major challenges facing the LIS profession. One librarian cogently remarked that "as long as technology exists in libraries, there will always be challenges whether we are readily embracing it or not".

Table 13: Librarian respondents' views on challenges the NUL Library and librarians a Facing (N=13)

Challenges	Frequency	Percentage
Lack of/insufficient training	11	85%
Coping with rapid changes such as changing from old to new library system (incompatibility of the systems)	8	62%
Shortage of staff that leads to inefficiency in service provision	7	54%
Insufficient equipment (shortage of modern equipment)	6	46%
Shortage of skills to comprehensively operate in the digital environment (e.g. digitization, copyright and licensing issues digital preservation)	4	31%
Lack of infrastructure (e.g. narrow bandwidth, power failure)	3	23%
NUL Library is lagging behind rapid changes as compared to its counterparts in Africa and globally	2	15%
Traditional training acquired many years ago	1	8%
Resistance to change as a result of, for example, age	1	8%
Funding challenges (financial constraints, little subvention from government)	1	8%
Lack of benchmarking to identify the library's shortcomings and to efficiently make the necessary changes	1	8%

With regard to the research question "what type of education and training are required for NUL librarians to effectively meet the information needs of humanities undergraduate students in the digital age academic library environment?" findings revealed that relevant LIS qualifications and IT related qualifications and a combination of these two at postgraduate and undergraduate levels were the preferred type of education and training required for NUL librarians to meet the humanities undergraduate students' library related information needs, according to students and librarians surveyed. This affirms that LIS education is an essential and a valuable starting point for LIS professionals to acquire knowledge and skills required in the LIS job market (Riley-Huff and Rholes, 2011). Ten out of 13 librarians highlighted basic ICTs, computer skills and evolving technologies (hands-on) as the top most informal training required of NUL librarians. Obviously, competency in ICTs and evolving technologies is what librarians need to meet students' technological needs as students also indicated IT related qualification as the second most required qualification for librarians in a digital academic library environment.

Table 14: Student respondents' views on NUL librarians' qualifications

Education and training required		Frequency	Percentage
Student respondents' views on NUL librarians' qualifications (N=201)			
Relevant LIS qualification		143	71%
IT related qualification		118	59%
Relevant subject degree		81	40%
Other		3	1%
Student respondent's combination for NUL librarians' qualifications (N=79)			
Relevant LIS qualification, IT related qualification		39	49%
Relevant LIS qualification, Relevant subject degree and IT related qualification		24	30%
Relevant LIS qualification, Relevant subject degree		11	14%
Relevant subject degree, IT related qualification		5	6%
Librarian respondents on education and training for NUL librarians (N=13)			
Formal education and training	Degree in LIS	6	46%
	Master's in LIS	5	38%
	Diploma in LIS	2	15%
	Subject degree (lower degree)	4	31%
Informal training (ongoing)	Basic ICTs, computer skills and evolving technologies (hands-on)	10	62%
	Marketing (online platforms)	5	15%
	Teaching (online and contact)	4	15%
	Customer care	3	23%
	Training of trainers	1	18%

With regard to level of education NUL librarians should possess, results showed that an overwhelming 158 out of 201 of the students surveyed indicated a postgraduate level, signalling that they expected a high level of knowledge and expertise on the part of their librarians. On the same question, librarian respondents mentioned master's degree (postgraduate) and bachelor's degree and diploma (undergraduate) as the type of education and training required of them by their students. A significant 40% of the students surveyed also considered a relevant subject degree as important. Studies by Gerolimos and Konsta (2008), Han and Hswe (2010) and Ocholla and Shongwe (2013) affirm that the LIS job market globally requires both undergraduate (for example, Diploma, Bachelor Degree) and postgraduate (for example, Honours, Masters, PhD.) qualifications. The findings further revealed that both formal and informal training are required for NUL librarians to adapt to changes. The librarian respondents preferred if informal training could be done via workshops, seminars, conferences and, most importantly, hands-on training to acquire practical skills.

Table 15: Student respondents' views on level of education for NUL librarians (N=201)

Impact of technology	Frequency	Percentage
Postgraduate	158	79%
Undergraduate	54	27%
Both	11	5%
Other	1	1%

Conclusion and Recommendation

Conclusions were drawn based on the discussion of the main findings in response to the research questions generated to address the study's objective. Coursework assignments, practical and projects and preparation for tests and examinations were the dominant purposes, amongst others, for which humanities undergraduate students needed information from the NUL Library. Findings revealed that students' library related information needs were met to a certain extent only. Therefore, NUL librarians need to further develop their knowledge and skills by engaging in effective learning since the library related information needs of students have been dramatically affected by evolving technology. Furthermore, a blend of competencies (disciplinary, generic and personal) is required for NUL librarians to meet the library related information needs of humanities undergraduate students in the current digital age.

While there seemed to be some correlation between NUL librarians and students surveyed especially on the disciplinary knowledge and skills required by NUL librarians, there was also some disjuncture between students' and librarians' perceptions of disciplinary knowledge and skills required to meet students' library related information needs. Hence, the need for the application of organisational learning by NUL Library to understand the perceptions of students to address this disjuncture.

Technology had a significant impact on the roles and functions of NUL librarians. Relevant LIS qualifications and IT related qualifications and a combination of the two at both postgraduate and undergraduate levels appeared to be the type of education and training required of NUL librarians to meet humanities undergraduate students' library related information needs. A relevant subject degree as well as informal education and training were also considered important. Based on the discussion and conclusions, the study recommended: Continuous education and training of NUL librarians (both formal and informal) towards effective learning so that they may more fully meet the library related information needs of humanities undergraduate students.

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