LIS professional competency index for the higher education sector in South Africa

Compiled by Jaya Raju

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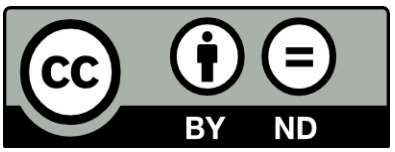

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Raju, J. 2015a. LIS education in the digital age for an African agenda. *Library Trends*, 64(1): 161-177.

Raju, J**.** 2015b. Curriculum content and delivery: South African LIS education responses to a changing information landscape. In Bitso, C. & Raju, R. (Eds.). *LIS education and research in a dynamic information landscape*. pp. 21-30. Cape Town: University of Cape Town Libraries. ISBN: 978-0-7992-2526-6. doi: http://dx.doi.org/10.15641/0-7992-2526-6.

Raju, J. 2016. Core competencies in LIS education: professional, generic and personal competencies for the higher education LIS sector. Paper presented at the Satellite Meeting Co-organised by the Section on Education and Training and World Library and Information Congress 82nd IFLA General Conference and Assembly Section on Library Theory and Research, The Conference Centre at OCLC, Dublin, Ohio, United States of America (USA), 10 August 2016. Available: http://people.ischool.illinois.edu/~weech/IFLA/Jaya%20Raju---16%20IFLA-Satellite.pdf [2016, September 17].

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List of abbreviations

ACRL	Association of College and Research Libraries
AfLIA	African Library and Information Associations and Institutions
ALA	American Library Association
ALIA	Australian Library and Information Association
APIs	application programming interfaces
CC	Creative Commons
CNRI	Corporation for National Research Initiatives
DoHET	Department of Higher Education and Training
DOI	Digital Object Identifier
DST	Department of Science and Technology
EAD	Encoded Archival Description
GIS	geospatial information system
HTML	HyperText Markup Language
ICTs	information and communication technologies
IL	information literacy
IP	intellectual property
IP	Internet Protocol
ISBN	International Standard Book Number
ISSN	International Standard Serial Number
IT	information technology
LIASA	Library and Information Association of South Africa
LIS	library and information services
LMS	learning management system
LSP	library services platform
MARC	Machine-Readable Cataloguing
METS	Metadata Encoding and Transmission Standard
NASIG	North American Serials Interest Group
NRF	National Research Foundation
OAI-PMH	Open Archives Initiative - Protocol for Metadata Harvesting

OCLC	Online Computer Library Centre
OERs	open educational resources
OJS	Open Journal System
OMP	Open Monograph Press
OPAC	online public access catalogue
PCs	personal computers
PURL	persistent uniform resource locator
RDA	Resource Description and Access
RDM	research data management
SA	South Africa
SaaS	Software as a Service
UK	United Kingdom
USA	United States of America
VRA	Visual Resources Association
WMA	Windows Media Audio
XML	Extensible Markup Language
XSLT	Extensible Stylesheet Language Transformations

Introduction and background

A competency index is generally understood to refer to a cluster or group of knowledge, skills and personal attributes (collectively known as competencies) that enable an individual to efficiently and effectively carry out a job or a task. A LIS (library and information services) professional competency index, therefore refers to such a cluster of competencies required of individuals practising as library and information services professionals (e.g. librarians or other information professionals) who hold specified professional qualifications that allow them to practise as LIS professionals, for example, in university academic libraries.

Background

Such a LIS professional competency index was a targeted outcome of a three-year NRF-funded research project which had the following objective: To develop a national LIS professional competency index for the higher education sector in South Africa for the following purposes:

i). To provide an objective framework against which LIS employers (university library directors) in the higher education sector in South Africa may ascertain existing knowledge and skills as well as identify areas for further knowledge and skills acquisition in their academic libraries in order to efficiently and effectively mediate a rapidly evolving ICT (information and communication technology)-driven higher education library and information environment;

ii). To provide an objective framework against which LIS employees (professional LIS practitioners) in the higher education sector in South Africa may ascertain their existing knowledge and skills as well as identify areas for further knowledge and skills acquisition for their professional development in a rapidly evolving digital higher education environment;

iii). To inform curriculum review and revision in LIS education and training as academic libraries in South Africa are a major employer of LIS graduates. It was envisaged that such a LIS professional competency index would provide a useful benchmark against which curricula of LIS schools in South Africa may be evaluated for relevance to competency requirements of a rapidly evolving ICT-driven academic library work environment;

iv). To be used by the LIS professional body in South Africa (LIASA: Library and Information Association of South Africa) as a framework to guide its registration of identified professional designations in the LIS profession; and,

v). To encourage the development of similar competency indices for other LIS sectors so that eventually the country may achieve a composite national LIS competency index to be used by LIS employers, LIS employees, LIS education and training providers and the LIS professional body, across all LIS sectors in South Africa.

The Principal Investigator is pleased to present in the form of this publication, such a LIS professional competency index for the higher education sector in South Africa – a first for the country. In working towards this final outcome of the three-year research project the Principal Investigator engaged in a variety of research activities (captured in detail in the papers published/presented from this project - see references provided on p. 8) which directly or indirectly contributed to the compilation of this competency index. Some of these research activities included: intensive reviewing of literature; data collection from LIS

professional practitioners via semi-structured interviews as well as a national online questionnaire survey of all academic libraries in South Africa and content analysis of over a 100 academic library professional position job advertisements for the period 2014-2016; the use of both quantitative and qualitative philosophical assumptions in the study; the use of theories such as the Core Competency Theory (Selznick 1957), Chaos of Disciplines Theory (Abbott 2001) and the Concept of Disruptive Innovation (Shank & Bell 2011) to inform different aspects of the study; supervision to completion of LIS knowledge and skills studies by masters' students which contributed to the research project; and, preparation of journal papers from these studies with supervised students. It is hoped that the final output in the form of this competency index, informed by the intermediate outputs in the form of peer-reviewed papers and completed postgraduate studies, has produced a result that meets the objectives outlined earlier.

Definitions and other clarifications

In the context of this index as well as the research which informed it, 'knowledge' is viewed as relevant conceptual and theoretical understanding acquired through education and experience. 'Skills' refer to the application of conceptual and theoretical knowledge, that is, the ability to carry out a task resulting from sustained effort and practice. In other words, while 'knowledge' refers to what one should know or understand, 'skills' refer to what one should be able to do. 'Personal attributes' refer to one's values, attitudes and personal traits. Knowledge, skills and personal attributes are collectively referred to in this index as 'competencies'.

The competencies reflected in this index (that is, the first level of entry [and sometimes the second] – highlighted in bold) emanated from the research project, referred to earlier, which sourced data from LIS professional practitioners from South Africa's 23 (at the time of the data collection in 2015) academic libraries and from content analysis of all professional position job advertisements that appeared in the period 2014-2016 in the *Mail & Guardian* weekly newspaper, on the LIS professional body listserv (*LiasaOnline*) and on the websites of South African public higher education institutions. In order to make the index more usable and meaningful, at the time of compilation each competency was provided with a narrative to explain the competency or its different aspects, to embed necessary definitions for clarification of concepts, to contextualise it (where necessary), and sometimes to even conflate it with other overlapping competencies to avoid unnecessary repetition or duplication. To do this the compiler drew from her own logic and discretion; from her experience as a researcher in this area as well as from her experience in and with academic libraries; from general literature such as relevant dictionaries, handbooks and websites; and, from other related competency statements. While the narratives or competency explanations are provided (in some places in more detail than in others depending on the competency, its complexity and its degree of importance to academic library services), it is not the intention of this index to drill down to operational/granular levels and to describe job functions in detail. Rather the intention is to generically scope competencies reflected in the outcomes of the research from which they emerged so that the index may serve the purposes for which it is intended. The result, it is hoped, is a streamlined and logical presentation of a LIS professional competency index, free of duplication and contradiction, which meets the objectives for which it was prepared.

Structure of the index

The research which informed this index (Raju 2014; 2016) as well as studies conducted in the United Kingdom (UK) (Orme 2008), in the United States of America (Choi & Rasmussen 2009), in Norway and Thailand (Nonthacumjane 2011) and in Australia (Haddow 2012), amongst others, all establish that a blend of discipline-specific, generic and personal competencies are required of the modern LIS professional practising in a higher education library in the digital age. Hence this index is structured in terms of these three categories of competencies. Further, in the South African study (Raju 2016), professional or discipline-specific competencies emerged as the most required competency category, followed closely by generic competencies with personal competencies lagging behind in third place. This trend is a reflection of findings in other studies too (Orme 2008; Partridge, Lee & Munro 2010; Partridge, Menzies, Lee & Munro 2010; Haddow 2012, amongst others) where it is revealed that while generic competencies (that is, life-long learning competencies that apply to all disciplines or professions) are highly sought after by LIS employers, discipline-specific or professional competencies (that is, those competencies that are specific to the LIS profession), are "still valued by LIS employers" (Raju 2014: 167). To reflect this trend emanating from the index compiler's own research as well as from the literature, the index assumes the order of discipline-specific competencies first, followed by generic and then personal competencies. It is for this reason, too, that the level of detail in the competency narratives is much greater in the discipline-specific category – after all this is an index to serve the LIS sector.

Finally, in terms of structure, the competencies in all three categories are ordered as closely as possible to the order of importance in which they emerged in the research study (Raju 2016). In other words, the competencies in greatest demand by employers (as reflected in job advertisements) and most emphasised by professional LIS practitioners in the online questionnaire survey, appear earlier in the index lists. However, in some instances aggregation of competencies and other adjustments were necessary to avoid duplication and to make for a more streamlined and logical presentation of the index. But as far as was possible, the order of the competencies reflects the original findings from the research from which they were drawn. Those appearing lower down in the lists, are important but not as important as those that dominate at the top of the lists. The same applies to the ordering of the three competency categories – for example, while personal attributes are important to complete a LIS professional's competency profile for an 21st century academic library, they are not as important as discipline-specific and generic competencies. The compiler believes that understanding of this feature of the competency index is important in extracting maximum benefit from its use for the purposes for which it has been compiled.

Validation

Despite this index being grounded in empirical research, the compiler thought it useful to engage in a process of validation, for purposes of ascertaining the accuracy of the workplace professional competency requirements and to enhance the general quality of the index. This involved requesting LIS practitioner experts to serve as expert reviewers of aspects of the index in which they held expertise, as well as a LIS scholarly editor to review the index in its entirety for logic, coherence and unity (see pp. iii-iv for names of these reviewers). Necessary adjustments were made as per suggestions by the scholarly editor and the expert reviewers.

Theory and practice

For clarity and understanding, the index tends to use examples, which from time to time would need to be updated as trends and technologies change, particularly in library and information services which have been heavily impacted by technology, specifically rapidly evolving information and communications technology, hence, the need for the index to be updated from time to time. In the meantime, it is hoped that what has been presented as a first iteration of a LIS professional competency index for the higher education sector in South Africa would be used by LIS employers and employees for practical purposes (to benchmark existing competencies and to ascertain the need for further knowledge and skills acquisition), by LIS educators (for curriculum development purposes) and by LIS researchers (as a basis for further research [empirical or theoretical] in the area of workplace competency exigencies). The Library and Information Association of South Africa (LIASA) too may find the index useful for its oversight of LIS education and training in the country.

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Discipline-specific competencies

These competencies are those knowledge and skill sets that are specific to a particular discipline, in this case Library and Information Science. This category of competencies may also be referred to as professional competencies, disciplinary competencies and sometimes, as jurisdictional competencies. They are essential ***discipline-specific*** *competencies, which together with required* ***generic*** *competencies and* ***personal attributes*** *(covered in the next two sections of this index) enable the provision of effective and efficient library and information services (LIS) in the higher education sector in South Africa in the digital age.*

For reasons already explained in the ***Introduction and background****, this section of the index is provided in greater detail than the two sections which follow. Hence, where necessary and for clarification purposes, definitions are built into (embedded in) the competency narratives and in some instances, where required, explanations are provided in italics. Examples of tools and software applications are also provided, for purposes of enhancing clarity.*

It should be noted that some of the competencies outlined in this section of the index may involve inter-departmental efforts within an academic library and are not necessarily confined to a single section of the library. For example, management of the library's digital resources would involve the cataloguing, systems and (information technology) IT, preservation and digitisation sections.

The competencies relating to library ICTs are provided in more detail than perhaps any other knowledge and skill set in the index. This is a reflection of the centre stage ICTs have taken in academic library services particularly, to the extent that they have extended traditional LIS services into new and innovative areas of service delivery. The ubiquitous requirement for advanced technology knowledge and skills in the 21st century academic library is reflected in the research from which this index emanates as well as in the literature generally. It is for this reason that the compiler of the index categorises LIS-related technology competencies as discipline-specific – her research (Raju 2017a – in

press) recommends that the LIS discipline should "stake an intellectual claim on this technology-driven extension of its disciplinary domain" and that "emerging library IT knowledge and skill sets identified in this study and in many others …[should be] pedagogically embedded in LIS curriculum design and development; that is, not as stand-alone or IT serviced courses but embedded in a curriculum located firmly within LIS epistemology and demonstrating the intellectual claim on this broadened disciplinary space resulting from a natural evolution of the LIS discipline in response to a technology-driven information environment". Her findings advise that "LIS educators [and practitioners] may work with cognate partners [such as in IT], as long as it is the LIS discipline that assumes hegemony in the stewardship of this technology-driven extension of traditional LIS disciplinary space" (Raju 2017a – in press). Hence it is critical to locate library ICT competencies in the discipline-specific category of this index.

Relevant experience

- In a higher education library environment
- In a research environment (e.g. Human Sciences Research Council library, Medical Research Council library, etc.)
- In a relevant aspect of an academic library service (e.g. cataloguing experience, liaison librarian experience, systems librarian experience, etc.).

Relevant qualification

- In Library and/or Information Science/Studies at a relevant NQF (National Qualifications Framework) level
- LIS related specialist qualification (e.g. Computer Science, Information Technology, Information Systems)
- LIS service related subject knowledge e.g. undergraduate degree/major or postgraduate qualification in History, Music, Biology, Law, etc.

Professional foundation

- Understand the broad context of the library and information environment
- Know the history of libraries and the evolution of information resources
- Understand the theory of Library and Information Science and related disciplines
- Understand the contexts in which information originates and is described, stored, organised, retrieved, disseminated, adapted and used

- Understand the ethical, legal and policy issues that impact on the LIS sector in South Africa
- Understand the past, present and future trends of the LIS profession.

Active LIS [library and information services] professional involvement

- Know and understand the breadth and identity of the LIS profession, its role in and contribution to society; and be able to articulate this to users, to other relevant university constituencies and to the general public
- Participate in LIS and LIS related conferences, workshops, seminars, webinars and other engagement forums for purposes of personal continuing professional development and to contribute to that of others in the LIS sector
- Serve on professional body (e.g. Library and Information Association of South Africa (LIASA)) and related structures (e.g. Higher Education Libraries Interest Group or ICT in Libraries Interest Group) for advancement of the profession
- Assume leadership roles in LIS professional body and related structures (e.g. Executive Committee of LIASA or Chairperson of the Academic Libraries Section of the African Library and Information Associations and Institutions [AfLIA]).

Metadata creation and management

- Understand the structure and workflows of metadata creation within the library services platform
- Understand and implement descriptive metadata creation, and subject analysis of content for assigning classification numbers, subject headings, index terms and other subject descriptors towards the organisation and retrieval of information of all types (including research data)
- Understand and apply internationally recognised standards (e.g. Resource Description and Access (RDA), Machine-Readable Cataloguing (MARC), Dublin Core, Dewey Decimal Classification, Library of Congress Subject Headings, Medical Subject Headings, etc.) to organise print and digital information resources for in-person or remote accessing from electronic library catalogues, institutional repositories and other database formats
- Maintain authority control and provide necessary cross-referencing within an information retrieval system e.g. a library catalogue
- Pursue knowledge to identify and learn new tools and technical skills in metadata creation and management to promote discoverability and enhance access to the library's information resources in all formats and means of presentation
- Understand the broader context (national and international) within which bibliographic control of information resources in all formats, function
- Stay abreast of current trends and innovations in library and information service (LIS) resource management, identify how such developments may impact on

bibliographic/metadata management and how they may be adopted to the benefit of the LIS service.

Library ICTs [information and communication technologies] and systems operations

- Assess technology trends impacting academic library services and advise relevant library and related stakeholders accordingly
- Demonstrate knowledge and understanding of the library services platform being used (e.g. SirsiDynix Symphony, Unicorn System, Aleph, Millennium/Sierra, Alma)
    - Understand the workflows of the library services platform (LSP)
    - Undertake periodic evaluations of the LSP and communicate with the vendor on services and any problems
    - Understand operating and database systems used by the LSP
    - Demonstrate understanding of the functions of the software used by the LSP
- Provide library ICT training and support for staff in the use of hardware, software and networks used in the library
- Install, configure and maintain computer hardware (e.g. (personal computers (PCs), Macs, tablets) and peripheral devices (e.g. printers and scanners)
    - Understand functions of computer hardware, internal components, peripherals and external storage drives
    - Perform troubleshooting for computer hardware and peripherals
    - Install and support audio and video equipment
- Ensure that required software is properly installed, licensed and ready to run in various sections of the library
    - Evaluate and select appropriate software applications for both library staff and users
    - Recognise when Software as a Service (SaaS – software distribution model in which software is licensed on a subscription basis and is centrally/cloud hosted) is a more appropriate solution than locally installed software; and develop and maintain effective working relationships with SaaS providers
    - Identify and communicate problems with software applications to relevant library and other staff
    - Understand and manage licensing for all library software applications
    - Understand and provide advice to library staff on open source software options
- Ensure that the library's network (both cabled and wireless) is running smoothly for optimal connectivity
    - Install, configure and maintain the library's local area networks
    - Support the library's telecommunications and wide area networks
    - Assess the library's Internet connectivity needs and liaise accordingly with relevant on-campus agencies for long-term sustainability of high-speed connectivity that meets these needs
    - Understand Internet protocol (IP) authentication for secure network access

- Understand the principles of identity and access management and integrate the library's need for authentication and authorisation with the university's identity management and access system
- Understand the infrastructure that supports the library's telephony and wide area networks
- Understand the library's site-specific telecommunication needs and advocate accordingly for increased bandwidth when needed
- Install, configure and maintain the library's wireless networks
- Provide support for wireless printing by library patrons using their own devices
- Troubleshoot problems with the library's networks to maintain optimal connectivity for staff and users of the library
- Employ practices in network security for maximum protection of the library systems, and staff and user information

- Configure and maintain the variety of servers relevant to the needs of the library (e.g. email, Web, file, print and database servers)
  - Understand the protocols of the various servers
  - Ensure server security
  - Consider the benefits of cloud-based/remote solutions to storage, hosting, etc. as opposed to locally-based solutions
- Install, configure, maintain and troubleshoot operating systems on library computers, including open source and mobile systems
- Install, configure, maintain and troubleshoot the library's public access computers
- Manage and maintain the library's collection of digital resources
  - Apply standards and best practices to ensure effective organisation, access, preservation and delivery of digital content
  - Understand and apply appropriate descriptive, structural and administrative metadata schemas (e.g. Dublin Core Metadata Element Set, Visual Resources Association (VRA) Core Categories, Encoded Archival Description (EAD)) and standards for expressing and storing data about information resources
  - Demonstrate knowledge of multimedia file formats, tools and methods for digital file format conversion, including knowledge of support for these formats via Web browsers on different platforms
  - Possess a working knowledge of best practices, industry standards and services for digitising text, image, audio and video media.
  - Demonstrate knowledge of content management and preservation systems, including open source content management software applications (e.g. Islandora)
  - Contribute to and apply library policies relating to digital resource holdings in areas such as collection of digital resources, digital preservation, rights management, emergency/disaster preparedness and recovery plans, etc.
  - Work in collaboration with institutional content enterprise systems, Web services, e-resource management, etc.

- Demonstrate a working knowledge of programming languages (and related standards and protocols) relevant to digital resources
  - Extensible Markup Language (XML), Extensible Stylesheet Language Transformations (XSLT) and XML Schema
  - XML-based application programming interfaces (APIs) for integrating systems and services
  - Web-based publishing tools and coding
  - Unix and relational database systems
  - Dublin Core, METS (Metadata Encoding and Transmission Standard) and OAI-PMH (Open Archives Initiative - Protocol for Metadata Harvesting)
  - System monitoring, testing and debugging
  - Semantic Web concepts (e.g. Linked Data)
  - Scripting languages (e.g. Python, Ruby, Perl) for processing textual data and managing system resources
- Develop interface services for integrated access to the library's digital resources
  - Drive the integration of discovery and delivery interface systems with the library services platform and other library digital information resources
  - Drive the integration of library digital resources with other systems in use in the university e.g. institutional website, learning management system (LMS), geospatial information system (GIS), etc.
- Demonstrate efforts to strengthen the library's digital resource systems and services
  - Manage a digital asset management infrastructure that supports access to digital content
  - Select and implement systems that are standards-based and that interoperate with the library's existing bibliographic systems as well as with emerging digital storage products and services e.g. cloud-based digital storage
  - Engage in ongoing re-designing of user interfaces based on the generation of objective data for evaluation purposes
  - Remain abreast of new developments in digital library systems and services (e.g. in metadata management, repository software, harvesting protocols, cloud hosted digital services, etc.)

- Evaluate, select, adapt and integrate social media, collaborative and mobile technologies and applications into the library's technology planning programme.

Information retrieval

- Locate and call up information from an information store (that is, retrieve required information using print or digital information resources)

- Demonstrate advanced information searching and retrieval skills using a variety of online or offline information resources
- Conduct a pre-enquiry interview on the basis of which to identify relevant information resources and construct a search strategy in response to a user's enquiry
- Understand and perform effective search queries using Boolean logic, where necessary, and multiple resources and search strategies
- Know of and be able to use relevant databases (e.g. EBSCOhost, ProQuest, JSTOR, ScienceDirect), search engines (e.g. Google, Google Scholar and other information gateways (e.g. subject portals as gateways to information in a particular field of study) - in order to guide users with scholarly enquiries
- Know how to navigate (methods/process of searching) online databases and the Web
- Synthesise search results from multiple information resources and evaluate for reliability, accuracy, currency and other quality related criteria.

Research support

- Understand the institutional and macro research landscape, particularly policies, funding structures and other services relating to knowledge production
- Understand the research needs of academics, researchers, postgraduate students and other user groups requiring research support
- Understand the knowledge structures of the particular discipline and its changing patterns of scholarly communication, including open scholarship
- Know and understand the research life cycle
- Know and understand the research proposal structure
- Know and understand research approaches, designs and methods (quantitative, qualitative and mixed)
- Know and understand literature reviewing
- Know and understand systematic review of literature as a research methodology
- Know and understand research data management (RDM) (e.g. policies, mandates, frameworks) as well as practise RDM (e.g. evaluation of data, ingesting, preservation, curation, sharing, re-use, RDM planning, policy development)
- Provide bibliometrics (quantitative analysis of citations and content of scholarly literature) services to ascertain research impact of published work as required by researchers for grant proposals, research rating applications, performance reviews, etc.
- Provide altmetrics (analysis incorporating social media, news outlets and scholarly commentary) services to supplement traditional journal metrics in reflecting research impact
- Provide research landscape analysis services using research evaluation tools (e.g. *SciVal, Web of Science*) to identify the following for use by researchers: disciplinary experts, research areas, potential collaborators, supervisors, publishing avenues, funding sources, etc.

- Know and be skilled in the use of referencing management tools (e.g. *RefWorks*, *Endnote*, *Mendeley*, *Zotero*)
- Know and understand plagiarism and its implications in research as well as plagiarism check software (e.g. *Turnitin, iThenticate*)
- Know and understand research ethics and their role in scholarship
- Know and understand intellectual property (IP) and copyright legislation as these pertain to knowledge production
- Build strong relationships with researchers and other campus professionals such as those in Information Technology (IT) and in the Research Office for collaborative initiatives in the promotion of research
- Know and understand computer software applications (e.g. *Excel, SPSS, NVivo, Atlas.ti, Provalis QDA Miner)* for data analysis, text mining and other research related activities.

Management of library and information services

- Understand and articulate to library staff and university constituencies how the library and information service aligns itself to the mission and vision of the parent organisation
- Undertake ongoing strategic planning for the library
    - Align strategic plans to the broader mission and vision of the parent organisation (the university) and to a 21st century library and information environment
    - Create strategic goals, objectives, actions and activities that reflect analysis of needs of user communities
    - Involve relevant stakeholder groups in developing and refining strategic plans
    - Ensure that strategic goals and objectives align with daily decisions and operations
    - Adjust strategic plans, as needed, in response to ongoing evaluation to ascertain success of strategic plans in meeting its objectives
- Understand the daily administration and supervisory management of the library
- Know, understand and apply service principles, theories, techniques and innovations for efficient delivery of LIS services to user communities
- Manage the library's physical environment (including physical facilities such as furniture, shelves, digital assets, aesthetic décor, cleaning, lighting and ventilation, air-conditioning, etc.), health and safety, and space planning, including the needs of those with disabilities
- Manage the library's human resources
    - Undertake effective recruitment and selection, taking into consideration organisational employment policies and procedures as well as national employment laws and regulations
    - Demonstrate leadership (foster a collaborative environment based on a shared vision, clear communication, open and transparent approach, being supportive and encouraging, valuing diversity, recognising achievements,

etc.) to empower and inspire LIS staff to deliver effective and high-quality service
    - Promote staff training and development through strategies and initiatives that encourage both formal and informal learning processes in the LIS workplace
    - Create career development plans for library staff and support career development opportunities for staff to acquire necessary competencies to advance their career development plans
    - Establish effective strategies for performance management with clear performance expectations in an environment with resources and opportunities for continuous growth and learning based on regular and constructive feedback on performance
    - Understand and apply legal standards and requirements for performance management
- Embrace organisational change, and support and encourage stakeholders to recognise the benefits of change to the LIS service as a whole
- Evaluate performance of LIS services
    - Apply appropriate methods to continually evaluate efficiency and effectiveness of services in order to improve them (e.g. LibQUAL surveys)
    - Understand and use data collection (quantitative, qualitative and mixed), research and analysis methods to demonstrate the value of the library to organisational decision-makers
    - Use outcomes-based evaluations to measure the impact of programmes and services.

Information literacy training

- Plan and manage (strategic location, budgeting, marketing and promotion, collaboration, space and technology resources, trainers, etc.) information literacy (IL) training programmes for specific user groups to meet the lifelong learning skill of being able to recognise an information need, locate the required information, evaluate it and use the retrieved information effectively
    - Collaborate with faculty academic colleagues to integrate appropriate information literacy concepts and competencies into subject course content and assessment tasks
- Design (for face-to-face or online environments) IL training curricula targeting digital age information literacy skills to meet lifelong learning needs of various categories of users, including undergraduate and postgraduate students and those with disabilities
    - Identify outcomes for specific IL training programmes and build a curriculum to meet these outcomes
    - Understand and apply basic instructional design principles in building curriculum content for IL training programmes
    - Understand and apply learning theory and learning styles to the instructional design of IL training programmes

- Deliver an IL training programme (online or face-to-face) to meet its outcomes
    - Select appropriate presentation methods for delivery of IL training based on understanding of teaching methods
    - Produce a lesson plan for the training session, including selection and preparation of learning materials
    - Prepare the learning environment, including technology set up (e.g. computer laboratory)
    - Employ effective training techniques (e.g. clear, structured and logical presentation that encourages engagement from learners, accommodates different learning styles, and, is sensitive to input from learners, to their needs and abilities and to classroom diversity)
    - Develop assessment methods, undertake assessment of IL learning activities and provide feedback to learners
- Evaluate IL training programmes using appropriate evaluation methods and use results of the evaluation to improve the planning, design and delivery of IL training programmes
- Provide informal IL instruction to users as the need arises
    - Demonstrate willingness to assist at the level of need
    - Demonstrate patience and empathy for learner needs, abilities and disabilities
    - Assist library users with searching the library's online public access catalogue (OPAC) and with accessing and navigating the Internet
    - Help library users to develop the ability to recognise an information need, locate information to meet this need and to evaluate the information retrieved for purposes required
    - Respond to questions from users about use of their own devices (laptops, tablets, e-readers, smartphones, etc.) in the library or remotely to access library resources and services
    - Recognise a user's need for formal IL training and identify appropriate opportunities for the user in the library's formal IL training offerings.

Scholarly communication and open access

- Know and understand current trends, best practices and models in the creation, publication, dissemination and preservation for future use of research writings and other scholarly output (scholarly communication), both nationally and internationally
- Know and understand formal means of scholarly communication (e.g. peer-reviewed journals) as well as informal channels (e.g. electronic listservs, social media blogs and tweets, etc.)
- Understand the knowledge structures of the particular discipline and its changing patterns of scholarly communication (working knowledge of a subject)
- Know and understand traditional (subscription-based and governed by commercial entities or professional societies) and open access (free online availability of research

output) models of publishing, intellectual property issues and general economics of publishing

- Understand current trends and issues in open access and scholarly communication (e.g. that relating to digital repositories, open publishing of journals and books, open educational resources (OERs), open data, open science, etc.)
- Know open access policies and related requirements
- Know discovery tools used for discovering and accessing information
- Understand data curation (that is, the ongoing management of data throughout its lifecycle, from its creation and subsequent usefulness to science and education, to the time it is archived for posterity or becomes obsolete), including preservation practices for such data
- Know and understand scholarly publishing services in order for the library to provide such services for scholarly output and research data
    - Know commercial and open access publishing platforms
    - Know publishing workflows, operational models and editorial processes
    - Know publishing standards: Digital Object Identifier (DOI), International Standard Serial Number (ISSN), International Standard Book Number (ISBN), persistent uniform resource locator (PURL) and citation options (e.g. OpenURL, Corporation for National Research Initiatives (CNRI) Handle)
    - Know funder mandates and requirements (e.g. a research funding body (such as the National Research Foundation (SA) or the Wellcome Trust (UK) requiring a funded researcher to make published peer-reviewed research output freely available)
    - Know metadata standards (e.g. MARC, Dublin Core, etc.) used to describe information sources and their content for retrieval purposes
    - Understand licensing issues related to open access publishing (e.g. Creative Commons (CC) licenses)
    - Use open access publishing software (e.g. Open Journal System (OJS) or Open Monograph Press (OMP)) for journal and book publishing)
    - Work with IT professionals to develop capacity and IT infrastructure for storage, metadata management, access and long-term preservation of published content
- Know and understand open repository services in order to collect, manage and disseminate digital output generated within the university community
    - Know repository software (e.g. Dspace)
    - Know metadata standards (e.g. MARC, Dublin Core, etc.) used to describe information sources and their content for retrieval purposes
    - Know data formats, database design, data management and data manipulation tools relating to the storage, preservation and retrieval of information from digital repositories
    - Manage repository platform and update software when required
    - Support researchers with depositing of research outputs into the repositories, that is, with self-archiving

    - Engage publishers on matters relating to archiving policies (e.g. embargo periods before an item may be available freely via the repository, article processing charges where required, etc.)
    - Understand copyright and licensing issues as they relate to scholarly content
- Advise academic staff, researchers and postgraduate students on open access publishing and copyright using knowledge of both traditional copyright and publishing and, Creative Commons (CC) and other open access licenses and publishing models
- Raise awareness of open access, especially issues around open access policy adherence, compliance with funders' mandates and benefits for the end-user
- Assess quality of scholarly resources using traditional bibliometrics as well as new and emerging metrics
    - Know and understand bibliometrics and altmetrics theory and practice
    - Know institutional promotion policies and criteria relating to academics' scholarly output
    - Know institutional interests in scholarly output as this relates to institutional ranking (nationally, continentally and internationally)
    - Support academic staff, researchers and postgraduate students in assessing the quality of journals and other scholarly sources for publication and other purposes
    - Advise the library's acquisitions department on quality indicators to be used in the selection of scholarly resources.

Information management *is a generic competency that refers collectively to expert oversight of the acquisition, organisation, storage, security, retrieval and dissemination of information and information resources in all formats and includes technical infrastructure considerations for the management of these various processes and activities. Various entries in this section (that is,* ***Discipline-specific competencies****) of the LIS professional competency index cover aspects of this generic and all-encompassing competency. Hence this obviates the need to unpack this as a single, stand-alone competency.*

Collection development and management

- Build and maintain a collection of information resources in a variety of formats (print, digital and other) based on the information needs of the user communities being served by a higher education library
- Apply selection and evaluation criteria to build a collection of quality and relevant resources
    - Understand the acquisitions and collection development processes and policies of the library
    - Apply objective standards to evaluate the content of information resources for authenticity, accuracy, reliability, authority, currency and other relevant selection and evaluation criteria

    - Follow trends in traditional and digital publishing to build a collection that is diverse, current and relevant to the mission of the library and to the needs of its user communities
    - Combine knowledge of user communities and consultation with a variety of review sources to make informed judgement on the selection of information resources
- Research, customise and roll-out systems and services to provide effective access to the library's information resources in all formats
    - Identify and provide an appropriate mix of technologies, formats and delivery modes to meet the information needs of a diversity of higher education information users
    - Collaborate with IT and other relevant departments to research, develop, assess and implement new systems, services and emerging technologies for enhanced delivery of information resources to meet users' needs
    - Collaborate with other libraries or organisations to share information resources to promote wider access to information
- Develop collection develop policies for the library
    - Develop policies and procedures for identifying and selecting information resources in all formats
    - Possess current knowledge of legislation governing access to information resources
    - Develop policies for weeding the collection, managing donations and gifts to the library, and disposing of library materials that are no longer required
- Conduct inventory checks and analyses of usage of library materials, where relevant, for purposes of repair and maintenance, duplication, replacement, de-selection, etc.
- Recognise items of historic value for the special and rare collections of the library
- Develop and be able to implement appropriate emergency and disaster preparedness and recovery plans for library collections, including digital resources.

Digitisation and preservation

- Develop and implement policies and procedures for digitisation of library resources for access and preservation
    - Understand and articulate the value of increasing accessibility of library materials, especially those of rare and historic nature, via digitisation
    - Understand the preservation role of digitisation of such library materials
    - Know and understand the theory, best practices, standards, processes and procedures relating to digital resource acquisition (of born-digital materials), creation (from physical artefacts e.g. printed text, images, sound – that is, digitisation/preservation reformatting), management, storage and preservation
    - Source, acquire and maintain digitisation hardware and software and/or identify vendors for outsourcing digitisation and preservation functions

    - Manage digitisation projects (scoping, costing, collaborating with other departments, protection of intellectual property, managing the timeline, promoting, delivering the project)
    - Promote greater visibility of digital collections by making digital content discoverable via a variety of online channels
- Use appropriate techniques for the preservation and conservation of library materials
    - Understand preservation and conservation issues, including those relating to archival preservation, refreshing, integrity and migration in digital preservation, and appropriate handling of physical materials
    - Apply suitable methods and techniques for storage and conservation of library materials, including archival storage of digital content
    - Timeously apply effective techniques for the repair and preservation of all formats of library materials
    - Understand the impact of environmental conditions on the physical state of library materials and accordingly provide guidance for monitoring and responding to these conditions
    - Understand and apply appropriate standards in respect of digitisation formats and media
    - Understand and abide by the library's collection development policies
    - Understand and abide by the library's policies for emergency and disaster preparedness and recovery of information resources, including digital resources
- Identify resources for, select and maintain the library's special and rare collections
    - Demonstrate an expansive knowledge of the history of the evolution of the book, including rare books and manuscripts
    - Identify collections of historic and significant value to the parent institution (e.g. the university) and articulate the value of building and maintaining such special collections
    - Apply special requirements for storage (physical and digital) of materials which are of important historical value
    - Develop policies and procedures to ensure security of rare and valuable library materials
    - Develop policy and procedures for backup and restore operations for digital archives.

Curation of digital content/research data

- Understand and carry out a range of activities delineated in the Digital Curation Lifecycle Model (which includes the creation or selection, acquisition, ingestion and archiving, management, maintenance [to prevent digital obsolescence], representation [metadata], discoverability and access, enhancing/adding value, preservation and portability of digital content [including research data]) for present and future use in research and scholarship

- Contextualise and present digital resources in a manner that contributes to the ethical construction of knowledge within and between artefacts and collections
- Identify, use and specify software tools and applications to support digital curation activities in a context of information technology infrastructure deployed to support digital/research data curation
- Identify and use resources to stay abreast of trends, technologies and practices relating to the field of digital curation
- Plan, co-ordinate, implement and evaluate digital curation projects and services
- Identify, understand and build services in response to the university's or the library's user communities' digital curation needs
- Engage in high-level, abstract and critical rationalisation of complex systems, workflows and conceptual models relating to digital curation
- Communicate with and relate effectively to content creators, users, researchers, library managers, institutional collaborators, etc. on matters such as research data archiving, data mining, research data management planning, advocacy and promotion of digital curation services, etc.

E-resources management

- Understand the concepts defining e-resource management systems, and understand electronic resources management software as well as the administrative functions of propriety databases
- Identify and use resources to maintain awareness of relevant vendors and available products
- Select, evaluate, organise and maintain the library's collection of e-resources
- Evaluate periodically the library's e-resources spending by assessing vendor options available in the context of interrelationships with its library services platform as well as its strategic plan governing its service delivery to users
- Understand e-resource licensing issues so as to be able to negotiate with vendors licensing terms that advantage the library and its users
- Maintain and make available reports (coverage of disciplinary content, usage rights and statistics, licences, etc.) on the library's e-resources subscriptions and/or purchases
- Collect, analyse and provide meaningful interpretation of usage data for electronic journal and database subscriptions in order to ascertain adjustments required for allocation of resources or re-negotiation of license agreements withvendors
- Understand current e-reader technologies and formats (e.g. Kindles, ePub readers, Windows Media Audio [WMA], audiobook mp3 players, etc.) for purposes of ascertaining compatibility with the library's e-resources requiring e-readers
- Train library staff to access e-books from the library catalogue or from shared publisher platforms using devices such as e-readers, tablets, smart phones, laptops, e-labs, etc.
- Evaluate, implement and maintain an OpenURL service for linking resources available online to relevant library services (e.g. library OPAC, indexing and

abstracting databases) so that the user may find a copy of the e-resource that s/he is allowed access to

- Understand metadata schemes, standards (for cataloguing, classification, subject headings, indexing, etc.) and emerging trends and how they impact on the discoverability of e-resources
- Evaluate, administer and maintain metasearch tools for efficient and seamless access to the library's e-resources
- Understand and administer options for authenticated access to the library's e-resources as applicable within the university context (e.g. use of password and user name for university staff and students in order to gain access to the library's e-resources collection)
- Research and ascertain means of providing access to the library's e-resources to users with mobile devices such as cellular phones.

Acquisitions processes and practices

- Establish processes for the selection, negotiation of contracts and procurement of resources and services for the library
- Establish procedures for the physical processing of library materials (where required)
- Understand the information supply chain of publishers, vendors, libraries and other sources, including new developments in the purchasing process, which impact on quality, costs and efficiencies of the final products and services
- Keep up with changes and new developments in this information supply chain
- Establish procedures for acquiring a diversity of materials for information use (e.g. printed periodicals and other serials, electronic media, audio-visual sources, government publications, historical manuscripts for special collections, donations, etc.)
- Ascertain the most efficient, cost effective and user-centred means to procure materials requested for teaching, learning and research
- Identify and adopt new technologies that would enhance the efficiency of the acquisitions process
- Establish procedures for tracking ordered material and for negotiating on issues such as returns, incorrect orders, items not received and price anomalies
- Manage the acquisitions budget
    - Allocate the materials budget for purchase in different disciplinary domains
    - Negotiate the purchase and licensing of materials
    - Demonstrate proficiency with software used to manage acquisitions accounts
    - Work in partnership with other higher education libraries to form co-operative arrangements in order to leverage discounted purchase/subscription options.

Reference work

- Assess the reference information needs of higher education user communities being served (that is, the need for relatively small 'bites' of authoritative information)
- Develop and maintain a collection of reference sources (e.g. dictionaries, handbooks, encyclopaedias, etc.) of a general and subject/discipline specific nature, to meet the ready reference information needs of higher education users
- Demonstrate knowledge of the library's reference collection (both print and online sources)
- Compile bibliographies, libguides, tutorials and other user guides to the library's reference sources to assist users to navigate this collection of reference sources in a variety of formats
- Ensure virtual access to the library's reference collection, including access via cellular phones
- Evaluate the reference collection on an ongoing basis to ensure currency and relevance to user needs and based on this make recommendations for new acquisitions and possible de-selections/weeding of items
- Demonstrate ability to conduct an effective reference interview to determine the nature, level and quantity of information required
- Demonstrate good communication skills in both face-to-face and online reference interactions
- Provide user instruction (in-person or virtually) for the reference collection to empower users to become independent information seekers and to enhance their critical thinking, self-directed learning and problem-solving abilities
- Respond to reference enquiries using current technology for maximum satisfaction of users' information needs
- Explore the use of new tools and platforms (e.g. virtual reference) for enhanced reference service delivery
- Demonstrate advanced information searching skills using effective search queries, multiple resources and search strategies
- Use feedback from users and other relevant stakeholders to evaluate the effectiveness of the library's reference service.

LIS research and publication

- Know and understand research principles, theories and methodologies (for quantitative, qualitative and mixed methods research)
- Demonstrate application of research methods to the LIS profession
- Demonstrate awareness of important research findings and research literature in the LIS field
- Demonstrate the ability to evaluate completed research and to use it to improve library and information services

- Conduct user studies to analyse information use behaviour and users' information needs
- Conduct evaluation studies of various library services or operations for quality improvement of LIS services
- Conduct research to advance LIS theory and its application to the provision of information services as a contribution to the advancement of knowledge in the LIS discipline
- Publish research conducted in peer-reviewed journals and other publications for purposes of disseminating research findings
- Observe ethics protocols when conducting LIS research, particularly when dealing with human subjects as data sources.

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Generic competencies

Generic competencies refer to what are known as transferable skills, or sometimes, as graduate attributes and they include life-long learning skills which allow individuals to function not only in disciplinary or subject domains but also in general employment and social situations. Hence they are applicable to all professions. The research from which this index emanates revealed that generic competencies are highly valued by employers and often in frequency counts of competency requirements appearing in LIS professional position job advertisements, they emerge right behind discipline-specific competencies and in some cases even surpass some of the latter in frequency distributions. Together with ***discipline-specific/professional*** *knowledge and skill sets and* ***personal attributes****,* ***generic skills*** *make up the composite competency requirements for LIS professionals mediating a 21st century digital higher education information environment.*

General management skills

- Understand and apply principles, theories and techniques in the areas of:
  - Management of organisational resources, including human resources
  - Strategic management
  - Budget management
  - Building and safety management
  - Office management
  - Organisational quality management
  - Organisational assurance and evaluation
  - Performance management
  - Legal compliance (e.g. health and safety legislation, labour law, financial regulations, etc.)
  - Change and innovations management
  - Diversity management
  - Risk management

General computer proficiency

- Perform basic email applications (send, receive, open, forward, delete and compose emails; send, receive and save attachments; manage addresses and contacts; create folders and file messages for later retrieval)
- Perform basic electronic calendar and task management (create and set appointments; set reminders; schedule meetings and invite invitees; create and manage tasks lists)
- Understand and use basic computer hardware and peripherals
- Understand and use mobile devices (smart phones, ipads, e-readers, etc.)
- Understand and use the Internet
- Understand basic Internet-use security protocols
- Understand and perform basic operating system functions (log on/log off; use multiple open windows; file and folder management; virus checks, etc.)
- Understand and perform basic functions of common software programs
- Perform basic word processing (create, open, save and delete files; select, cut, copy and paste text; structure, format and spell-check documents)
- Execute basic printing operations from common applications
- Maintain awareness of core Web technologies and apply appropriately for effective learning and collaboration (e.g. social networks to share and communicate information; Web conferencing applications for virtual meetings; etc.).

Interpersonal skills

- **Communication**
  - Communicate effectively orally, in writing as well as in digital interactions
  - Present ideas in a clear and concise manner
  - Demonstrate proficient language and writing skills (correct grammar, sentence construction and spelling, logical development of ideas), for example, in report writing
  - Understand perceptions, perspectives and communication styles of each individual/audience one is engaging with
  - Demonstrate good/active listening skills
- **Presentation/Public speaking/Workshop facilitation**
  - Research, organise and present content relevant to the target audience
  - Demonstrate good articulation, effective delivery and appropriate gestures in public speaking
  - Create an environment for interactive engagement among participants
- **Social media skills**
  - Use Internet-based applications (Facebook, Twitter, Snapchat, Instagram, blogs, wikis, etc.) to create and exchange user generated content
  - Observe relevant social media etiquette and protocols during such interaction

- **Negotiation/Conflict resolution**
  - Engage effectively to reach agreement, to persuade or to motivate
  - Understand diversity in behaviour patterns and develop responses appropriate to each
  - Use appropriate communication strategies to manage conflict constructively
  - Demonstrate good negotiation skills for achieving favourable outcomes
- **Collaboration**
  - Develop effective relationships with individuals/organisations towards achieving common goals
  - Contribute to a collaborative and collegial work environment
  - Understand and embrace individual and organisational diversity
  - Share with colleagues knowledge gained through conferences and other professional meetings and through formal and informal means
  - Provide constructive feedback to and receive it from colleagues, supervisors and other relevant stakeholders
- **Teamwork**
  - Contribute to the achievement of team objectives
  - Accept shared responsibility for the team's work
  - Value and acknowledge the contribution of individual team members
  - Contribute constructively to problem-solving in the team and strive for consensus in finding solutions to challenges
  - Participate actively in the team's information-gathering and decision-making towards attainment of the team's objectives
  - Provide to and receive from team members coaching and mentoring, as necessary
- **Networking**
  - Demonstrate ability to build mutually beneficial partnerships and alliances
  - Create and sustain intra-organisational linkages and working relationships, for example, with the IT Department, the Research Office within a university, for purposes of pursuing common goals
  - Mobilise resources from within the organisation, donors or the wider community towards meeting objectives
  - Harness available synergy within the organisation and beyond to fulfil targeted objectives
  - Organise events and programmes to enhance the visibility of the organisation and its services
- **Customer (learner) focus**
  - Foster quality service as required by users of the service, both online and in-person, ensuring application of customer service principles
  - Listen effectively to determine and address users'/learners' needs
  - Respond appropriately to diversity, cultural and disability differences among users/learners

- Respond effectively to difficult situations with users/learners, ensuring that users'/learners' concerns and complaints are appropriately addressed and in a professional manner.

Leadership skills

- Provide active and insight-led leadership at any level in an organisation, shaping and driving oneself, others and activity within the organisation
- Align efforts and activities with the mission and vision of the organisation
- Demonstrate ability to lead, positively influence, inspire and manage individuals, teams or organisations towards the achievement of targeted goals
- Identify strengths of individuals and leverage these to achieve common goals
- Foster a working environment of collegiality, integrity and ethical behaviour of the highest standards
- Act and take decisions in the interest of the team rather than oneself
- Empower colleagues to take ownership of challenges, to problem-solve and to take decisions accordingly
- Demonstrate initiative in seeking new opportunities and embracing challenges, applying critical, creative and innovative thinking as required
- Anticipate and adapt to change effectively, embracing new roles and changing priorities with enthusiasm, a positive attitude and also by exploring and adopting new technologies to deliver new ideas, products and services.

Planning and organising skills

- Demonstrate planning and organising ability to contribute to long and short term goals
    - Manage time and priorities when carrying out a task/s
    - Be resourceful in decision-making, for example, to efficiently eliminate wastage and avoid repetition or unnecessary delay
    - Establish clear project objectives and deliverables in collaboration with a supervisor and/or team members
    - Plan how to use workplace resources, including time, to effectively reduce wastage or avoid damage to resources
    - Participate in continuous improvement processes, for example, using feedback from a supervisor and/or team members to improve personal and professional presentation.

Teaching and training skills

- Select teaching and training approaches suitable for specific audiences (learners)
- Understand the variety of instructional methods and modes available, including online instructional methods
- Know, understand application of and use classroom instructional technologies and teaching media

- Understand and apply learning theories (e.g. behaviourism, cognitivism, constructivism) appropriately to specific audiences(learners)
- Accommodate different learning styles in teaching delivery
- Understand and apply basic instructional design principles to training programmes
- Undertake assessment of learning activities and provide feedback to learners
- Evaluate learning experience for possible improvement of teaching or training design and delivery.

Supervisory skills

- Demonstrate effective communication skills, including being a good listener
- Plan work for a section and this includes setting realistic objectives for the team and managing priorities
- Recognise the need to train and develop members of the team through identification of each member's strengths and weaknesses
- Demonstrate the ability to problem solve in response to challenges that may interfere with teamwork or service delivery/productivity
- Practice fair and consistent supervision with all team members.

Research and development, and publication skills

- Understand and apply research principles, theories and methods to the workplace and professional environment
- Demonstrate ability to gather data to test new ideas for development of new products or services
- Demonstrate proficiency in basic research, applied research and their use in development for purposes of arriving at the best solutions to challenges and innovative efforts in an organisation
- Publish research conducted in peer-reviewed journals and other publications for purposes of disseminating research findings.

Record-keeping skills

- Select information to keep a recorded account of in either hand-written, printed, photographic or computer-readable format, for purposes of future reference or preservation
- Understand, and be able to select as appropriate, different methods of organising recorded accounts of processes, discussions, events, participation, etc. for legal or historical purposes.

Problem-solving skills

- Demonstrate ability to accurately identify causes of problems, apply problem-solving methodologies effectively and make a decision on the best possible solution based on a careful analysis of the various available courses of action

- **Problem identification skills**: detect and recognise that there is a problem, identify the nature of the problem and define the problem
- **Analytical skills:** break down the problem situation into key components or sub-issues to identify the cause of the problem
- **Critical thinking skills:** engage in reflective and independent thinking about the matter at hand, systematically clarify different points of view relating to the problem, and understand the logical connection between ideas for purposes of constructing a coherent argument towards resolution of the problem
- **Lateral/Creative thinking skills:** use lateral or creative thinking to come up with fresh approaches to solve the problem, that is, look beyond the obvious and traditional modes of thought, search for new insights, novel approaches and new ways of understanding and conceiving of things
- **Decision-making skills:** select the best solution for implementation based on an analysis of the different courses of action that are possible.

Mentoring and coaching skills

- Support colleagues in their career development by sharing the benefits of experience and knowledge, and providing confidence-building and encouragement
- Demonstrate patience and understanding
- Demonstrate good listening skills
- Create an open and supportive environment for discussion and engagement
- Provide constructive feedback and advice.

Statistical analysis skills

- Describe the nature of the data to be analysed
- Demonstrate ability to use statistical analysis software (e.g. *SPSS*, *Excel*, etc.)
- Explain the relationship of the data to the population it relates to
- Summarise understanding of how the data relates to the population by using, for example, graphs such as bar charts and line charts.

Multi-tasking skills

- Demonstrate ability to balance competing demands on one's time and energy and the ability to handle multiple priorities in the workplace.

Academic writing and editing skills

- Demonstrate ability to use an academic style of writing for preparing formal reports, conference papers and presentations, and research papers for publication which generally require: a formal tone and style; use of a third-person rather than a first-person perspective; a clear focus on the topic/issue rather than on the author's opinion; and, employs precise word choice and a high standard of language usage

- Demonstrate proficiency in reading and correcting language usage in formal academic writing for enhancement of quality of academic writing, logical flow of ideas and general readability.

Health and safety competencies

- Know and understand health and safety regulations applicable to the workplace and the implications of non-compliance with laws, rules, policies and guidelines designed to protect employees, the public and the environment from harm.

Marketing and advocacy skills

- Understand and apply marketing and advocacy theory and practice to promote the organisation and its services using the latest available communication tools and media sources
- Develop, implement and evaluate on an ongoing basis a marketing plan and branding strategy targeted at the organisation's stakeholders
- Maintain positive public relations via consistent and highly professional communication and promotion of the organisation's values, services and achievements to all its stakeholders.

Multilingual skills

- Demonstrate proficiency in the use of multiple languages prevalent in a particular work environment.

Knowledge of trends in higher education

- Know and understand the current trends prevailing in the higher education sector within which the institution/university is located e.g. social, political and economic issues impacting higher education
- Know and understand the latest trends in curriculum development in higher education e.g. calls for decolonisation of the curriculum in South African higher education following the 2015 and 2016 #RhodesMust Fall and #FeesMustFall student protests, respectively
- Know and understand funders' requirements of researchers in the higher education sector - for example in the case of South Africa, funding requirements of the National Research Foundation (NRF), Department of Higher Education and Training (DoHET) or the Department of Science and Technology (DST) e.g. research impact measurements required of researchers for funding proposals and research rating applications; publication in journals on specified accredited lists for subsidy earnings from government; etc.

Results orientation skills

- Focus on achieving results as per goals set

- Utilise tools and approaches to ensure that the project remains on target and on budget.

Time management skills

- Demonstrate ability to plan and exercise control over the amount of time spent on specific tasks with the objective of increasing effectiveness, efficiency and productivity in the accomplishment of these tasks.

Project management skills

- Understand and apply project management principles and procedures in the planning and implementation of programmes, projects and services
- Employ relevant technology tools to enhance efficiency of project management
- Use available resources efficiently to manage projects effectively within assigned budgets
- Lead project teams with clear work plans, timelines, realistic deadlines and effective communication
- Monitor project progress and evaluate project performance for quality and quantity standards
- Demonstrate adaptability, flexibility, creativity, and patience and understanding with team members throughout the life cycle of the project
- Compile and disseminate project reports to relevant stakeholders.

Website development and maintenance skills

- Understand and apply basic principles for designing and hosting a website and for writing for the Web
- Apply principles of usability and accessibility when designing the user interface
- Edit and organise website content
- Verify website links and update content regularly
- Demonstrate proficiency with Web content management systems (that is, software applications for website authoring by users with little knowledge of programming languages to create and manage website content)
- Understand and edit HTML (HyperText Markup Language) tags – HTML is the standard markup language for creating webpages where 'markup language' refers to the way the tags are used to define the page layout and 'hypertext' refers to the hyperlinks that an HTML page may contain.

Numeracy skills

- Demonstrate ability to understand and apply in the work environment basic numerical concepts of addition, subtraction, multiplication and division as well as calculate numerical measurements such as percentages, area and averages.

Personal and professional development skills

- Demonstrate commitment to life-long learning
- Pursue personal and professional development through continuing education, formal or informal
- Set personal career goals, identify learning needs and devise a learning plan to address these needs
- Demonstrate initiative and responsibility for own learning
- Pursue learning in multiple formats, including online learning, and practice self-directed learning
- Engage in professional networking and active participation in professional associations
- Keep abreast with new ideas and technologies, seek opportunities to apply new knowledge in the workplace and to share best practices and new experiences with colleagues.

Reading comprehension skills

- Demonstrate ability to read text, process it and understand its meaning.

Co-ordinating skills

- Demonstrate ability to organise individuals or groups of individuals for a particular task so that they work effectively together to accomplish a goal.

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Personal attributes

An individual's personal attributes, that is, values, attitudes and personal traits, also impact on performance in the workplace. Like generic competencies, personal competencies are not specific to a particular discipline or profession and may not be as critical as professional competencies, but nevertheless they are still necessary to form a blend of ***discipline-specific****,* ***generic*** *and* ***personal competencies*** *required for LIS professionals to effectively and efficiently practise in a rapidly evolving, technology-driven academic library environment.*

Ability to work independently

- Demonstrate ability to work without supervision
- Engage in self-monitoring and self-correcting
- Know what you need to do
- Exercise initiative rather than wait to be told what to do
- Work to the best of your ability and until the task is completed, without the need to be prompted
- Work at a pace that you can sustain
- Take ownership of your mistakes rather than making excuses or blaming others.

Ability to pay attention to detail

- Demonstrate ability to achieve thoroughness and accuracy when accomplishing tasks by paying attention to all areas involved.

Ability to work under pressure

- Demonstrate ability to respond well when put under pressure in a work situation e.g. when urgent or unexpected matters that require your attention arise and place you under physical or mental stress.

Initiative

- Demonstrate ability to assess a situation and initiate action independently, that is, to take charge before others intervene
- Demonstrate a willingness to take responsibility to get things done.

General knowledge

- Exhibit good general knowledge, that is, knowledge on a variety of subjects accumulated gradually from reading and exposure to other media rather than from formal study – general knowledge is commonly associated with general intelligence and well-rounded education in an individual and is a useful workplace attribute
- Develop general knowledge as it helps one to grow personally and academically, and assists in analysing situations better and in keeping abreast of new trends, knowledge and technologies for application in the workplace.

Responsibility

- Demonstrate capacity to be reliable or dependable to carry out work that can be accounted for
- Demonstrate good judgement and the ability to act appropriately and make decisions as required.

Adaptability

- Demonstrate ability to adjust to changing situations and to accept new challenges and priorities.

Innovative ability

- Demonstrate ability to come up with new ideas about how something can be done and which represents a more effective approach or a better solution to an existing work situation.

Dedication/Commitment

- Demonstrate capacity to be committed to a task, purpose, cause or goal.

Intellectual curiosity

- Demonstrate a passion or desire to invest time and effort to learn more about matters/things of interest
- Intellectually curious individuals
    - Challenge traditional modes of thought
    - Ask relevant questions and engage actively with issues
    - Are outcomes-driven
    - Promote open discourse
    - View matters holistically.

Passion for technology

- Demonstrate your passion for technology by applying technological knowledge on a day-to-day basis, for example,

- Bring technology into your own life, into that of others and into the workplace
- Use technology to resolve practical problems
- Be curious and open-minded about emerging technologies
- Connect with the world via technology
- Have an online presence to increase your visibility in the digital world.

Diligence

- Demonstrate persistent and earnest effort together with detailed attention in the completion of a task that has been undertaken.

Emotional intelligence

- Demonstrate capacity to be aware that emotions influence your behaviour and impact others, either positively or negatively
- Manage your emotions in interpersonal engagement with colleagues and others with judiciousness and empathy.

Pro-active capacity

- Demonstrate capacity to take action to effect change rather than reacting to change when it happens.

Personal credibility

- Demonstrate the personal quality or attribute of being believable or worthy of trust.

Ethical approach to all issues

- Conduct duties in compliance with the relevant professional code of ethics e.g. ethics codes relating to access to and use of information, for example, issues of privacy, confidentiality, etc.
- Exhibit honesty and integrity during organisational activities in observance of ethics, that is, moral principles that distinguish between right and wrong in human action.

Sound judgement

- Demonstrate capacity to assess situations and draw conclusions which are not influenced by personal prejudice and emotions.

Personal drive/Motivation

- Also known as self-motivation, this personal attribute refers to an individual's personal desire to achieve certain goals in life.

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