PROFESSIONAL PATHWAYS

Frameworks Project

Technical Report
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Professional Pathways Frameworks Project Technical Report

Australian **Library** and **Information** Association

Executive Summary

In the *ALIA strategic plan 2020-2024*, the Board of Directors of the Australian Library and Information Association (ALIA) have acknowledged that the quality of the workforce represents a critical dimension of a successful library and information services sector. ALIA states that the association is committed to supporting a resilient, diverse workforce by attracting and developing talented, committed individuals from different cultural backgrounds, who have the desire, strength and agility to navigate a rapidly changing workplace. It is crucial that Indigenous people's library and information needs are represented in the profession and ALIA has acknowledged the need to increase the number of people engaged in the sector.

The resources and programs offered by library and information services should reflect and meet their communities' interests and needs. In recent years, the range of programs and services offered by libraries has expanded and, in many cases, new staff from different disciplines have been employed. These staff have valuable knowledge and expertise in professional fields beyond library and information science (LIS), for example in early childhood literacy, education, social work, community development, the creative arts, information and communications technologies (ICT) and data science. At the same time, with the closure of a number of LIS academic programs, serious concerns have been expressed about the current situation – and future prospects – of library and information science (LIS) education in this country.

The development of an issues paper, *The future of LIS education* (2019), initiated a sector-wide consultation process. The ideas captured in the consultations, presented in *The future of library and information science education in Australia: Discussion paper* (2020), confirmed that many other professional skillsets, not only LIS skillsets, were needed to design, deliver and administer contemporary library and information services. As our broader understanding of a diverse workforce should encompass not only cultural, linguistic, and gender diversity, but also embrace disciplinary diversity, ALIA has asked whether the traditional qualification pathways are still the only appropriate option for a career in the library and information profession. The association sought to explore whether, in addition to the long-accepted ALIA-accredited LIS qualifications, there maybe was scope to consider new professional pathways which would open up opportunities to increase workforce diversity. Such a strategy could potentially help attain one of the principal goals of ALIA's workforce initiative: to "attract clever people from a wide range of backgrounds to the industry, who share the ethos and values of the profession, in order to be inclusive and relevant".

As a result of this consultative process, it was recognised that the project needed to be wider than simply LIS education. The project was reimagined as the Professional Pathways Initiative with the release of ALIA's *Professional Pathways plan* in November 2020. The vision of the initiative is develop a LIS professional education framework with traditional and alternative pathways in order to build and support a strong LIS profession that is highly valued and supported by employers and by the community. With the appropriate portfolio of skills, knowledge and ethical practice, the workforce would be well-positioned to deliver the library and information services that truly anticipate and meet the needs of the community.

Four strategies are presented in the plan:

- To recognise the skills and experience of LIS professionals and to incentivise continuous learning through a professional certification process
- To create pathways for people with non-LIS academic qualifications to seek LIS professional status through knowledge, skills and experience, according to new industry-developed professional frameworks
- To create an ALIA-accredited Library Certificate for people working at the entry-level in libraries with no formal qualifications
- To work with the university and TAFE sectors to strengthen the position of existing LIS courses through industry investment in student places and research.

The draft plan was discussed by ALIA members and other interested parties in a series of online Town Hall meetings (December 2020 - January 2021), culminating with a *Professional Pathways Summit* (February 2021) where library leaders, LIS educators, subject matter experts and new graduates worked together to map the way forward. The Professional Pathways project was ratified by the ALIA Board of Directors in June 2021 and a representational Professional Pathways Board was constituted to provide strategic oversight for the project.

It is critical that there is a sound and reliable evidence base to guide and support the decisions that ALIA will make about alternative professional pathways. Accordingly, a comprehensive literature review and environmental scan was commissioned to locate, analyse and synthesise the relevant professional and academic discussions about the wide range of issues that underpin a mature understanding of the existing and potential pathways into the LIS profession. The research involved an in-depth examination of five areas of enquiry:

- What is the competency profile of a library and information professional? How do different skills frameworks present the knowledge, skills and attributes that are required to deliver quality services to our communities?
- What is our understanding of the values and ethics that distinguish the library and information profession from other fields?
- What are the different qualification pathways into the library and information profession here in Australia, and in other countries? How do these pathways compare with those in other professions such as accounting, law data management and architecture?
- With a rapidly changing working environment driven by technological developments, what are the emerging trends in professional qualification pathways? How do different stakeholder groups, including educators and employers in industry and the professions, view the opportunities and challenges of micro-credentials?
- What about the imperative for continuing professional development? How do professional associations encourage and support career-long learning and development?

This *Technical Report* presents the detailed findings which focus on skills frameworks, professional ethics and values, qualification pathways, future views of education and training, continuous professional development and professional status.

In response to the questions about the competency profile of library and information professionals, a range of skills frameworks are examined in order to identify the knowledge and skills relevant to LIS education and practice. The discussion is spread over three chapters: a review of the 'core competency' frameworks issued by national library and information associations (Chapter 2); a

summary of the skills frameworks that are relevant to library and information staff working in specialised fields of LIS practice (Chapter 3); and an overview of some of the skillsets required for future professional practice (Chapter 4).

The skills frameworks that have been examined include those developed for Australian libraries, as well as those published in countries which arguably have closer social, cultural and political connections with this country: New Zealand, the United Kingdom (UK), Canada and the United States (US). The focus is on the frameworks issued by ALIA, Libraries and Information Association of New Zealand Aotearoa (LIANZA), the Chartered Institute of Library and Information Professionals (CILIP) and the American Library Association (ALA). These frameworks seek to cover the core knowledge and skills that support professional practice across the breadth of the LIS sector, and as such, they may be used to inform curriculum in LIS education and training, staff development and career planning, or staff performance evaluations. It was found that, while the four core skills frameworks had many commonalities, the degree of comprehensiveness, the structure and the categorisation of areas of knowledge and skills tended to vary.

Members of the LIS profession frequently align themselves with the particular information setting in which they work, with the result that there is an array of skills frameworks which present the deeper perspectives of the competencies required in specialised areas of practice. The discussion examines a range of skills frameworks developed for public libraries, academic and research libraries, special libraries, health information services and school libraries, as well as for the allied fields of information and records management and archives.

The elements of differentiation that were identified for the different groups of library and information services generally related to the diverse communities served. As public libraries serve the broadest spectrum of community members, the fundamental service orientation and the community orientation are central to professional practice. Academic and research libraries serve scholarly communities, so the context in which they operate is shaped by the national education and research policy environment. Staff in this field need to understand discipline-specific research cultures and methodologies and be actively involved in the creation and dissemination of new knowledge through their engagement with the ever-evolving fields of scholarly communication, data management, research impact and, increasingly, the open agenda.

The essence of differentiation for special library and information services lies in the sector-specific or industry-specific information and knowledge context and the users who work in these specialised environments. LIS professionals need to have a holistic understanding of the strategic role of information assets in the parent organisation within the framework of information governance and compliance. As they often work independently, they need to be able to establish and nurture their own strategic partnerships to maximise the value of their knowledge and skills.

Teacher librarians, on the other hand, are embedded in the school environment: their communities include the students, teaching staff, educational administrators and the wider school community. As educators themselves, they need a strong grasp of curriculum issues and pedagogy which they blend with their skills in information management. They advocate for literacy as the springboard to lifelong learning and believe deeper in the value of digital literacy and critical thinking to foster the ethical creation and use of information.

In the skills frameworks developed for information professionals working in the allied fields of archives, information and records management, the focus is on the legislative and policy environment that supports the curation and stewardship of records and archival materials. The principal areas of practice include conservation and preservation, information architecture, information flows and information security.

The research into the different skills frameworks highlighted the complex interplay between 'hard' skills, or technical competencies, and 'soft' skills, or personal and interpersonal qualities. While attributes such as critical thinking and creative problem solving, flexibility and adaptability, relationship building and communication were already viewed as valuable in contemporary professional practice, there was evidence that they would increase in importance in the digital information environment.

The discussion continues with a look at the skills and capabilities required in some of the newer areas of professional activity. The research reviewed the reports of the scoping work undertaken to identify current industry trends, as well as the published analyses of job advertisements for recently created professional roles. Eight areas of knowledge and skills are explored, with the rapidly changing digital information environment key to each: digital dexterity, digital curation, data librarianship, open scholarship, digital humanities librarianship, information governance, artificial intelligence and machine learning, and media literacy. In addition, the growing awareness of the information needs of Aboriginal and Torres Strait Islander has led to deeper engagement with the significance of Indigenous cultural competence. Some of the strategies developed by the Australian library and information community to develop Indigenous cultural competence, as well as cultural competence more broadly, are discussed.

As one of the strategic goals for the project is to attract people from different backgrounds into the profession, based on the premise that there will be a shared ethos and common values, Chapter 5 considers whether library and information professionals have shared values and ethics, and how these might contribute to our professional identity. While professional identity is associated with an individual's professional self-concept based on attributes, beliefs, values, motives and experiences, there is also a collective dimension where values are common to the professional community as a whole. This is an important topic in the Professional Pathways project, given the ways in which the range of knowledge and skills required by staff working in library and information services is broadening and deepening.

In his exploration of 'our enduring values', Michael Gorman (2015) identified the belief in the greater good represented the key principle that underpinned all other professional values. The greater good is viewed as the antithesis of individualism, materialism and selfishness which Gorman argues are prevalent in today's society. The International Federation of Library Associations and Institutions (IFLA) embraces four core values: freedom of access to information and freedom of expression; universal and equitable access to information; the belief in the value of libraries in guaranteeing that access; and the commitment to diversity, equality and inclusion. ALIA's ten core values reflect these principles, but they are more action-oriented: promotion of the free flow of information; delivery of authentic information; connection of people to ideas and learning; dedication to literacy and digital literacy; respect for diversity, individuality and equality of all; adherence to information privacy principles; preservation of the human record; service excellence; commitment to professional growth and development, and creating partnerships and

collaborations to advance these values. This action-oriented approach emphasises the importance of integrating core values into our personal and professional lives.

Significantly, values should not be regarded as irrefutable absolutes. In the discussion about the skills for future professional practice, it was observed that every generation should reflect on their professional values, and change, adapt or reinterpret them as society changes and evolves. Ethical problems may occur in any situation involving the generation, organisation, storage, distribution or consumption of information, and digital technologies have undoubtedly escalated the potential for ethical dilemmas. Putting our values into practice influences our understanding of 'acceptable professional behaviour' and 'trustworthiness'. It was argued that the library and information professionals were trustworthy because their work is founded on the strong ethos, ethics and values of librarianship. The IFLA code of ethics, endorsed by ALIA, sets out the principle that librarianship, in its very essence, is an ethical activity embodying a value-rich approach to professional work with information. The notion of values and ethics are closely intertwined because a code of ethics will inevitably reflect a profession's shared values: values determine what is important, while ethics determine what is right.

While the comparison of the codes of ethics of different professional bodies highlighted some common principles, a wide range of ethical issues were examined in the professional literature, including copyright, internet filtering, access to and preservation of digital information resources, public library fees and charges, data protection, and privacy and confidentiality. The ALA stressed that a code of ethics should be structured as a framework of broad statements that can guide ethical decision making, but it cannot be prescriptive in terms of covering every information interaction. In the skills frameworks examined in Chapter 2 and Chapter 3, ethical behaviour is generally included as a core competency for library and information professionals. CILIP has drawn the association's ethical principles, professional conduct and core values into a single resource, the *CILIP ethical framework*, which sits at the heart of the *Professional Knowledge and Skills Framework* (PKSB). CILIP firmly believes that ethics and values are central to all aspects of professional practice.

The current pathways into the library and information profession here in Australia are explained in Chapter 6: the vocational pathways encompass apprenticeships and traineeships, Certificate III and Certificate IV, and the ALIA-accredited Diploma of Library and Information Services. The higher education pathways include ALIA-accredited courses at the levels of Bachelor, Graduate Diploma and Master's levels. Beyond these qualifications, further career opportunities are offered by higher degrees by research: Master's and PhD. The pathways available to teacher librarians and to information professionals working in archives and records management are also outlined. The relationship between educational qualifications and ALIA's membership categories is clarified.

An international perspective is provided with the review of the qualification pathways managed by LIANZA in New Zealand, CILIP in the UK and ALA in the US and Canada. LIANZA offers three routes to Professional Recognition, candidates applying via either Route A: a recognised NZ library and information qualification, Route B: a recognised overseas qualification, or Route C: other circumstances. Route C includes a pathway for individuals with an undergraduate degree in any discipline plus three or more years' professional experience. Relevant professional expertise is mapped to LIANZA's *Bodies of Knowledge* (BOKs).

In England, CILIP has recently introduced a vocational Library, Information and Archives Services Assistant Apprenticeship program, which has wide industry and employer support. For professionally qualified individuals, there are three levels of professional status: Certification, Chartership and Fellowship. The Professional Registration process requires members to map their skills and experience to the PKSB and to submit a portfolio for assessment, which should cover personal performance, organisational context and knowledge of the wider professional context. Since 2019 there has also been a professional registration pathway for knowledge managers.

In the US and Canada, the ALA accredits library school programs, but the association does not offer any programs for individual professional registration. Some US states have regulatory certification schemes for the staff working in public libraries, e.g. New York State Public Library Certification. Professional education is also offered by iSchools, which offer academic programs in a wider field of information studies, reaching a broader selection of students and preparing professionals for work beyond libraries.

The pathways for entry into four other professions are presented: accounting, data management, law and architecture. While three of these are regulated and require licences, certificates or registration to practice, there are still flexible career-focused opportunities for entry into the field. In these and many other professional arenas, there is evidence of a strong interest in alternative pathways that involve shorter form credentials. In a recent review of the Australian Qualifications Framework (AQF), the value of shorter form credentials was highlighted as a strategy to address the increasing demand for upskilling and re-skilling of workers in a rapidly changing working environment driven by technological developments.

The emerging trends in professional qualification pathways are examined in Chapter 7. Attention is paid to the opportunities and challenges associated with micro-credentialling. The views of the different stakeholder groups, including educators and training providers and employers in industry and the professions are reviewed, and a number of brief case studies provide examples of the evolving landscape of massive open online courses (MOOCs), digital badges and stackable micro-credentials. The potential role of the professional association to encourage lifelong learning and to support members on their career journey was acknowledged. In the UK, CILIP has already introduced a program of short course accreditation to provide a guarantee of quality for modular courses, day courses and online courses within the library, information and knowledge field.

In Chapter 8, the discussion builds on the idea that lifelong learning should be a practical reality for all workers, given the rapidly changing work environment propelled by technological developments. The value of continuing professional development weaves its way through the whole report: it is included as a dimension in many of the different skills frameworks, it is central to our understanding of the skills required for future professional practice, it is embedded in our professional values, it is an essential building block for attaining LIS qualifications and for creating a strong future-focused workforce. The pivotal role played by professional associations to encourage and support career-long learning, as well as to formally recognise continuing professional development (CPD) to retain professional status, is examined. The similarities and differences between the approaches adopted in Australia, New Zealand, the UK and the US are considered.

In Australia, the ALIA CPD scheme is presented as a model of tracking personal and professional development over a three-year period. The scheme is linked to the professional status as Certified Professional or Distinguished Certified Professional. Participants in the scheme are encouraged to map their professional learning with a specialisation aligned with their field of professional practice. New members of ALIA are automatically enrolled in the CPD scheme, but it remains voluntary to actively participate. ALIA also has a Proficiency Recognition Program which has been designed for General or Student members who are just embarking on a career in the library and information sector.

A member's CPD activities are an important element of LIANZA's Professional Registration program. Revalidation of professional status is required every three years, with the member's development activities mapped to the BOKs. On the other hand, the revalidation process for CILIP members who hold Professional Registration is an annual event. The ALA does not have any formal CPD scheme.

This comprehensive research study confirms that many library and information professionals have not only accepted CPD as a practical reality, but they also demonstrate their commitment to being active professionals. Their interest in continuous learning, widening knowledge and mastering new skills leads to a high level of autonomy, resourcefulness and ethical responsibility in the search for professional excellence. This finding bodes well for the actualisation of ALIA's vision for a strong, diverse and future-ready workforce with contemporary skills that ensures the quality of library and information services.

In the AQF review, it was emphasised that new career pathways will no longer be linear and hierarchical. The research conducted in the literature review and environmental scan confirmed the growing interest in more flexible, personalised forms of credentials which leverage the opportunities of work-based learning. The confidence to move away from a one-size-fits-all approach, to adopt a new mindset and to work collaboratively with others to conceptualise a new LIS education framework to support alternative professional pathways to professional status, will require meaningful collaboration between industry practitioners, employers, educators and training providers, and the association.

Key findings

This *Technical Report* makes it clear that ALIA's investment in the *Professional Pathways* initiative is timely and vital to meet the challenges and opportunities of the evolving work environment. Governments, employers, educators and workers (current and future) are all aware of the need to change the traditional model of education for and training in the professions to drive excellence and currency among professionals. A new mindset of life-long active professionalism, based on core ethics and values and with support for whole-of-career development, is needed for libraries and information services to grow and develop in line with advances in society and technologies.

With support from key stakeholders, the *Professional Pathways* project is positioned to create a sustainable future for the library and information workforce in Australia. In addition to the conclusions in the body of the report, we have distilled the following key findings from this report to inform the next stages of the project:

1. Alongside core professional knowledge, values and ethics sit at the centre of professional practice and professional identity; these differentiate the library and information profession from other sectors.

2. When reviewed in light of national and international skills and competency frameworks, ALIA's *Foundation knowledge for entry-level library and information professionals* (2020e) is current and relevant, and provides a solid base for further developmental work.

3. There is currently no comprehensive Australian framework of knowledge, skills and ethical behaviour that represents a sector-wide, whole-of-career resource, capable of supporting the learning and development needs of all library and information professionals.

4. The current ALIA-accredited higher education and vocational education qualifications provide important pathways into the profession. Strong industry engagement and support is important to ensure that courses continue to respond to the needs of the sector.

5. There are many diverse areas of specialised practice, within and across library and information sectors, that are critical to the functioning of the sector. It is acknowledged that the different specialisations require a range of approaches to support the development of the knowledge and skills needed for professional practice.

6. There are opportunities for ALIA to work with library and information educators, employers and key stakeholders to develop new pathways into the profession at different levels. Pathways should encompass the core principles of professional identity, professional values and professional ethics, and an understanding of the wider library and information environment. Successful professional transition programs and/or credentialled pathways may provide useful models.

7. In a rapidly changing world, the imperative for continuing professional development (CPD) is widely acknowledged. Professional associations are in a strong position to encourage and support career-long learning and to formally recognise CPD as an essential component for attaining and revalidating professional status. The current ALIA CPD Scheme could be reviewed and strengthened, with consideration given to the concept of revalidation of professional status.

8. There is scope for further work to encourage active professionalism as an individual and collective attribute that is integral to all areas of practice and all interactions with others. The cultivation of active professionalism will support a whole-of-career perspective of employment in the library and information sector.

9. The challenges and opportunities that ALIA is seeking to address through this project are neither unique to one library and information sector nor to Australia. To respond to the dynamic environment and to address the challenges, a whole-of-sector approach is required. The cross-cutting and global nature of the issues provides opportunities to consult with international professional bodies to achieve common objectives.

Contents

List of abbreviations

AACA	Architects Accreditation Council of Australia
aaDH	Australasian Association for Digital Humanities
AAH	Australian Academy of the Humanities
AALL	American Association of Law Libraries
AASL	American Association of School Librarians
ABC	Australian Broadcasting Commission
ABS	Australian Bureau of Statistics
ACA	Association of Canadian Archivist
ACODE	Australasian Council on Open Distance and eLearning
ACoP	Australian Council of Professions
ACRL	Association of College and Research Libraries
ACT	Australian Capital Territory
AI	Artificial intelligence
AI4LAM	Artificial Intelligence for Libraries, Archives and Museums
AIIM	Association for Intelligent Information Management
AIM	Australian Institute of Management
AITSL	Australian Institute for Teaching and School Leadership
ALA	American Library Association
ALCTS	Association for Library Collections & Technical Services
ALIA	Australian Library and Information Association
ALLA	Australian Law Librarians' Association
AMLA	Australian Media Literacy Alliance
ANDS	Australian National Data Service
ANP	Apprenticeship Network Providers
ANU	Australian National University
ANZCO	Australian and New Zealand Standard Classification of Occupations
API	American Press Institute
APLA	Australian Public Library Alliance
APSA	Australian Public Service Academy
APS	Australian Public Service
APSC	Australian Public Service Commission
AQF	Australian Qualifications Framework
ARA	Archives and Records Association UK
ARDC	Australian Research Data Commons
ARL	Association of Research Libraries
ARMA	Association for Records Managers and Administrators
ARMS	Australasian Research Management Society

ASA	Australian Society of Archivists
ASEAN	Association of Southeast Asian Nations
ASLA	Australian School Library Association
ASU	Arizona State University
ATN	Australian Technology Network
ATSILIRN	Aboriginal and Torres Strait Islander Library, Information and Resources Network
AusKM	Australian Society for Knowledge Managers
BC	British Columbia
BOAQ	Board of Architects Queensland
BOK	Body of Knowledge
BSLISE	Building Strong Library and Information Science Education
CA ANZ	Institute of Chartered Accountants Australia & New Zealand
CALL	Canadian Association of Law Librarians
CAPPE	Centre of Applied Philosophy and Public Ethics
CARL	Canadian Association of Research Libraries
CAUL	Council of Australian University Librarians
CAEP	Council for the Accreditation of Educator Preparation
CDMP	Certified Data Management Professional
CFLA-FCAB	Canadian Federation of Library Associations - Fédération Canadienne des Associations de Bibliothèques
CILF	Competency Index for the Library Field
CILIP	Chartered Institute of Library and Information Professionals
CIPS	Canadian Institute of Procurement and Supply
CLA	Canadian Library Association
CMF	Common Microcredential Framework
CNI	Coalition for Networked Information
COAR	Confederation of Open Access Repositories
CPA	Certified Practicing Accountant
CPD	Continuing Professional Development
CPDWL	Continuing Education and Workplace Learning
CRIG	CAVAL Research and Information Group
CSL	Canadian School Libraries
CSU	Charles Sturt University
DAMA-I	Data Management Association International
DCC	Digital Curation Centre
DCMS	Department for Digital, Culture, Media & Sport
DESE	Department of Education, Skills and Employment
DigCurV	Digital Curator Vocational Education Europe Project
DMBOK	Data Management Body of Knowledge
DPMC	Department of Prime Minister and Cabinet
DSS	Department of Social Services

DTA	Digital Transformation Agency
EAC	ALIA Education Advisory Committee
EAHIL	European Association for Health Information and Libraries
EBLIP	Evidence Based Library and Information Practice
EDI	Equity, diversity and inclusion
EMC	European MOOC Consortium
EOSC	European Open Science Cloud
EPA	Entrustable professional activity
EQF	European Qualifications Framework
EU	European Union
EURBICA	European branch of the International Council of Archives
FAIFE	Freedom of Access to Information and Freedom of Expression
FAIR	Findable, Accessible, Interoperable, Reusable
FE	Further Education
FLICC	Federal Library and Information Center Committee
GLAM	Galleries, libraries, archives and museums
GLAMR	Galleries, libraries, archives, museums and records management
HE	Higher education
HLA	Health Libraries Australia
IFLA	International Federation of Library Associations and Institutions
IALL	International Association of Law Librarians
ICA	International Council for Archives
ICT	Information and communications technologies
IM	Information management
IMLS	Institute of Museum and Library Studies
IFATE	Institute for Apprenticeships & Technical Education
InfoBOK	Information Body of Knowledge
InfoGovANZ	Information Governance ANZ
InTASC	Interstate Teacher Assessment and Support Consortium
IRMS	Information and Records Management Society
ISRG	Indigenous Strategy Reference Group
ISTE	International Society for Technology Education
JCU	James Cook University
KSA	Knowledge, skills and abilities / Knowledge, skills and attributes
KSB	Knowledge, skills and behaviours
LAM	Libraries, archives and museums
LANT	Libraries & Archives Northern Territory
LARKIM	Library, archives, records, information management & knowledge management
LIANZA	Library and Information Association New Zealand Aotearoa
LIBER	Association of European Research Libraries
Libraries SA	Libraries South Australia

LIS	Library and information science
MAGERT	Map and Geography Round Table
MIL	Media and information literacy
MILA	Media and Information Literacy Alliance
MLA	Medical Libraries Association
MLIS	Master of Library and Information Science
MoAD	Museum of American Democracy
MOOC	Massive Open Online Course
NAA	National Archives of Australia
NASIG	North American Serials Interest Group
NASW	National Association of Social Workers
NATSIHEC	National Aboriginal and Torres Strait Islanders Higher Education Consortium
NCCC	National Centre for Cultural Competence
NCTR	National Centre for Truth and Reconciliation
NFSA	National Film and Sound Archive
NILPPA	National Impact of Library Public Programs Assessment
NSLA	National and State Libraries Australia
NYSL	New York State Library
NZ	New Zealand
NZLLA	New Zealand Law Librarians' Association
NZQA	New Zealand Qualifications Authority
ONDC	Office of the National Data Commissioner
OSALL	Organisation of South African Law Libraries
PKSB	Professional Knowledge and Skills Base
PLT	Practical Legal Training
PLVN	Public Libraries Victoria Network
PSC	Professional Standards Council
PSEL	Professional Standards for Educational Leaders
QAA	Quality Assurance Agency
QILT	Quality Indicators for Learning and Teaching
QLS	Queensland Law Society
QULOC	Queensland University Libraries Office of Cooperation
QUT	Queensland University of Technology
RAC	Research Advisory Committee
RAILS	Australasian Conference on Research Applications in information and Library Studies
RIMPA	Records and Information Management Professionals Australasia
RLUK	Research Libraries UK
RMAA	Records Management Association of Australasia
RTO	Registered training organisation
SAA	Society of American Archivists
SCL	Society of Chief Librarians (now Libraries Connected)

SDG	Sustainable Development Goal
SET	Section for Education and Training
SFIA	Skills Framework for the Information Age
SJSU	San José State University
SLA	Special Libraries Association
SLANZA	School Library Association of New Zealand Aotearoa
SLAV	School Library Association of Victoria
SLNC	State Library of North Carolina
SLNSW	State Library of New South Wales
SLQ	State Library of Queensland
SLV	State Library Victoria
SLWA	State Library of Western Australia
SR	Systematic review
TAFE	Technical and Further Education
UA	Universities Australia
UBC	University of British Columbia
UIUC	University of Illinois Urbana Champaign
UK	United Kingdom
UN	United Nations
UQ	University of Queensland
US	United States
UTS	University of Technology Sydney
VET	Vocational education and training
VPL 2030	Victorian Public Libraries 2030: Strategic Framework
VUW	Victoria University Wellington
WA	Western Australia
WIPO	World Intellectual Property Organisation
WSU	Western Sydney University

1.   Introduction

The *Professional Pathways* project represents an ambitious initiative for the Australian Library and Information Association (ALIA): the goal is to strengthen the profession in this country by increasing diversity and building a future-ready workforce (ALIA, 2021a). One of the principal objectives of the four-year project is to develop an appropriate framework which will not only strengthen the current accredited library and information science (LIS) qualifications, but also offer alternative options for professional-level entry into the library and information profession. The preliminary activities in the *Professional Pathways* workplan have focused on establishing an evidence-base to guide and support the complex decisions that ALIA will make about professional pathways into the LIS profession. A comprehensive literature review and environmental scan was commissioned to explore and examine the relevant professional and academic discussions about the wide range of issues that underpin a mature understanding of the existing and potential pathways.

This *Technical Report* aims to present a comprehensive examination of five themes that are relevant to our understanding of the current and future pathways into the library and information profession. The research work sought to respond to a series of key questions:

- What is the competency profile of a library and information professional?
  How do different skills frameworks present the knowledge, skills and attributes that are required to deliver quality services to our communities?
- What is our understanding of the values and ethics that distinguish the library and information profession from other fields?
- What are the different qualification pathways into the library and information profession here in Australia, and in other countries? How do these pathways compare with those in other professions such as accounting, law, data management and architecture?
- With a rapidly changing working environment driven by technological developments, what are the emerging trends in professional qualification pathways? How do different stakeholder groups, including educators and employers in industry and the professions, view the opportunities and challenges of micro-credentials?
- What about the imperative for continuing professional development? How do professional associations encourage and support career-long learning and development?

The activities that have supported this enquiry-based research have led to the discovery of an extensive range of resources including reports, peer-reviewed journal articles, dissertations, policies, guidelines, protocols, discussion papers, industry journals, conference papers, websites and blogs. Although the search strategies covered the window of 2010-2021, the primary focus has been on the most recent information relevant to professional education here in Australia and overseas. The issues relating to skills frameworks, ethics and values, qualification pathways, future views of education and training, continuing professional development and professional status, have been viewed from the differing perspectives of government bodies, education consultants, training providers, academic researchers and professional bodies. It is hoped that the explorations and discussions will prove valuable in guiding and shaping the next stages of ALIA's *Professional Pathways* project.

The first strategic priority for the Australian Library and Information Association (ALIA), as presented in the *ALIA strategic plan 2020-2024* (ALIA, 2020a), focuses on the library and information workforce (p.1):

Supporting a resilient, diverse workforce: attracting and developing talented, committed individuals from different cultural backgrounds, who will have the strength and agility to navigate a rapidly changing workplace.

Strategies, frameworks and plans for building an inclusive workforce which represents community diversity can be found across the government, corporate, academic and not-for-profit sectors. It has long been argued that the library and information workforce should reflect the diversity inherent in the communities they serve. ALIA has endorsed the vision of "a united Australia which respects this land of ours; values the Indigenous heritage; and provides justice and equity for all" (ALIA, 2009, p.1). The association acknowledges Aboriginal and Torres Strait Islander people as the First Peoples of Australia and recognises the wide diversity of Indigenous cultures.

In the *ALIA workforce diversity trend report* (ALIA, 2019a), however, the very low level of Indigenous employment in the library and information sector was noted and the association called for a significant increase in the number of workers who identify as being from Indigenous backgrounds. While the research data collected in the *National survey on Aboriginal and Torres Strait Islander employment in Australian libraries* (UTS, Jumbunna Institute, 2021) confirmed the low numbers of Aboriginal and Torres Strait Islander people employed in the sector, survey respondents expressed hope that there would be good opportunities in the future to support career development, with the expectation that new pathways would help more Indigenous peoples enter the profession.

The multicultural character of Australia has developed over recent decades. As 30% of the present population, or 7.6 million people, were born overseas, and over 300 languages are spoken in Australian homes (ABS, 2021), there is scope for libraries to employ a multicultural workforce. Beyond diversity in the workplace itself, however, it is critical that libraries develop and deliver the relevant collections, programs and services to directly respond to the wide range of community interests and to support the spectrum of community needs. Importantly, the specific needs of Aboriginal and Torres Strait people as First Peoples of Australia need to be considered, and there are unique roles that libraries can develop to acknowledge and recognise Indigenous histories and cultures and to contribute to national reconciliation.

The ambit of the programs and services offered by library and information services across this country has undoubtedly expanded in recent years – and is likely to continue to expand into further new areas of practice – with the result that many non-LIS qualified personnel are attracted to the emerging fields of professional practice in the library and information sector. People from many different disciplines, including IT, data science, education, early childhood literacy, social work, community development and the creative arts, are already working in the new roles that have been established. If we accept that library programs and services are becoming increasingly diverse, then it is critical that we also consider the knowledge and skillsets and the staffing profile required to deliver contemporary library and information services. If we want to attract talented and committed individuals, we must also ask whether the current qualification pathways into the library and information sector are still the only appropriate ones.

In late 2019, ALIA published an Issues Paper, *The Future of LIS education* (ALIA, 2019b), to investigate the growing concerns expressed across the sector about the state of library and information science (LIS) education in this country. As the number of LIS courses offered by higher education and vocational institutions had declined from 50 to 36 over the decade 2009 - 2019 (ALIA, 2020b), ALIA

invited LIS educators, students, employers and the wider membership of the association to discuss the challenges associated with professional education and training for the library and information workforce. Three key areas were examined: the issues relating to the current pathways to becoming a LIS professional; the issues relating to the sustainability of LIS education; and the issues relating to employer engagement in the education and development of future LIS professionals. A series of focus group discussions was held across the country, along with several interviews with 'critical friends', to explore some of the more problematic issues in greater depth.

The findings from the nation-wide data gathering activities were presented in *The future of library and information science education in Australia: Discussion paper* (ALIA, 2020c). One key finding was that, while the core business of library management generally sat with library and information professionals, many other professional skillsets were already being used in the design, delivery and administration of programs and services. It was agreed that ALIA's recognition of LIS qualifications remained essential, but it was also felt that there was scope for new pathways into the profession which could open up opportunities to increase the diversity of the LIS workforce and ensure that staff had a wider range of contemporary skills and expertise. Library workers who did not hold LIS qualifications believed that they were applying their skills in productive and valued ways, but they were not really recognised as 'library and information professionals'. One research participant believed that the opportunities offered by the changing skills landscape could be leveraged (ALIA, 2020d, p.4):

> Librarians are not always open to skills obtained in different backgrounds, valuing 'irrelevant' library experience over 'relevant' non-library experience. Libraries should be more open to people from different industries and, likewise, librarians should be more open to gaining experience in other sectors.

A strong LIS profession therefore not only depends on building a diverse workforce to strengthen the roles, capabilities and responsibilities of LIS-qualified professionals, but also on offering alternative pathways for people with non-LIS academic qualifications to join the profession so that their knowledge, skills and expertise might be recognised in line with "new industry-developed professional frameworks" (ALIA, 2020d, p.5). Ultimately, the goal is to "attract clever people from a wide range of backgrounds to the industry, who share the ethos and values of the profession, in order to be inclusive and relevant" (ALIA, 2020d, p.23).

The consultation draft of the *Professional Pathways* plan (ALIA, 2020d) was released in November 2020. The plan included four strategies relating to the desirable features of a strong LIS profession:

- To recognise the skills and experience of LIS professionals and to incentivise continuous learning through a professional certification process
- To create pathways for people with non-LIS academic qualifications to seek LIS professional status through knowledge, skills and experience, according to new industry-developed professional frameworks
- To create an ALIA-accredited Library Certificate for people working at the entry-level in libraries with no formal qualifications
- To work with the university and TAFE sectors to strengthen the position of existing LIS courses through industry investment in student places and research.

These strategies were discussed by ALIA members and other interested parties in a series of online Town Hall meetings held during the months of December 2020 and January 2021. The consultation

process culminated in February 2021 with a *Professional Pathways Summit* where library leaders, LIS educators, subject matter experts and new graduates worked together to map the way forward and endorsed the Professional Pathways Plan. In July 2021 the Professional Pathways Board was constituted to provide strategic oversight for the project.

The logic proposition that guides the project seeks to achieve the vision for a strong profession (ALIA, 2021a):

> The *Professional Pathways* initiative recognises that an LIS workforce that reflects the diversity of the community, equipped with the right skills, knowledge and ethics, and valued and supported by employers and the community will be best placed to deliver library and information services that anticipate and meet the needs of the community, now and into the future.

The concept of 'diversity' is therefore critical: the LIS profession must acknowledge and respond to the *diversity* of society, and a *diversity* of skills and expertise is required across the workforce to provide the rich *diversity* of library and information services enjoyed by the Australian population. The consultation activities undertaken by ALIA in 2019-2020 indicated that there was interest in a model of multiple pathways into and across the LIS sector, rather the existing single, common career path into libraries. An appreciation of all aspects of the profession on the part of employers and employees would contribute to a deeper understanding of the roles of and the contributions made by LIS professionals.

But what do we mean when we use the word *professional*? Already in this introduction, reference has been made to professional skillsets, professional learning, professional education, professional qualifications, professional certification, professional frameworks, professional status, and the professional literature. What do we understand when we see or hear the word *profession*? How do we interpret the concept of *professionalism*? These words tend to be used quite loosely not only in everyday language, but also in the published resources that have been reviewed for this report. One of the main challenges in defining the terms comes from the overlap of "an everyday usage with the complex realities of those occupations variously identified as professions" (Dent et al., 2016, p. 1). The authors argue that the terms are not fixed concepts, but they change to reflect fluid institutional arrangements and external forces. Some preliminary research was undertaken by the research team to explore the significance of the words and to propose a common understanding for the *Professional Pathways* project.

The semantic dilemma is central to the activities of organisations such as the Australian Council of Professions (AcoP) and the Professional Standards Council (PSC). Historically, the word *profession* refers to a "disciplined group of individuals who adhere to ethical standards and who hold themselves out as, and are accepted by the public as possessing special knowledge and skills in a widely recognised body of learning derived from research, education and training at a high level, and who are prepared to apply this knowledge and exercise these skills in the interest of others" (AcoP, n.d.). Medicine and law are often held out as exemplars of the professions. While the PSC points to the ACoP definition of 'profession' on its website, it also acknowledges that the term *profession* inevitably "means different things to different people. But at its core, it's meant to be an indicator of trust and expertise" (PSC, n.d.-a).

Both AcoP and the PSC draw on the definition of the noun *professional* presented by Cruess, Johnston and Cruess (2004) whereby a professional is a member of a profession. "Professionals are governed by a code of ethics, and profess commitment to competence, integrity and morality, altruism, and the promotion of the public good within their expert domain" (AcoP, n.d.; PSC, n.d.-a). In its policy documents and guidelines, ALIA highlights professional qualifications when it refers to library and information professionals as "those members of the profession who have successfully completed an entry-level qualification in library and information science at either Associate or Library Technician level" (ALIA, 2020e).

When used as an adjective, the word *professional* may be used in many different ways: working in a profession, e.g. m*anagerial and professional staff*; *r*elating to a profession and its rules, standards, and arrangements, e.g. p*rofessional association, professional qualification, professional training*; *r*elating to an individual's work or career, e.g. w*e have a good professional relationship*; *p*laying a sport or doing an activity as a job, rather than merely as an interest or hobby, e.g. *professional footballer, a professional photographer*; showing a high level of skill or training, e.g. a *thoroughly professional job*; or behaving in a correct way at work and doing your job well, e.g. *the team was very professional and hardworking* (Macmillan Dictionary, 2021). The use of the term *professional* in this report generally reflects the narrower connection with a professional body, e.g. professional qualification; relating to work or career, e.g. professional values and ethics; or skills and training, e.g. continuing professional development.

The term *professionalism* is used as an attribute which relates to "the personally held beliefs about one's own conduct as a professional. It's often linked to the upholding of the principles, laws, ethics and conventions of a profession as a way of practice" (PSC, n.d.-a). In his essay commissioned by AcoP, Beaton (2010) highlights the centrality of ethical behaviour: "professionalism involves not only knowledge and expertise – skills of the head and hand – but also the virtues of trustworthiness and altruism" (p.21). Integrity is identified as the hallmark of professionalism. In this report, the discussion explores the significance of professional identity, common values and a shared ethos for the library and information profession.

The *Professional Pathways* project has picked up some of the threads from a major study undertaken a decade ago, *Re-conceptualising and re-positioning Australian library and information science education for the 21st century* (Partridge et al., 2011). The project team for the study, funded by the Commonwealth Government-funded Australian Learning and Teaching Council, included educators from the ten higher education institutions offering LIS programs at that time, as well as one vocational education and training program.

The national project addressed the key research question: "How can Australian LIS education produce, in a sustainable manner, the diverse supply of graduates with the appropriate attributes to develop and maintain high quality professional practice in the rapidly changing 21st century?" (Partridge et al., 2011, p.4). The study sought "to provide foundation research that would inform and guide future directions for LIS education and training in Australia" (Partridge et al., 2011, p.8). Ten strategic recommendations were presented which outlined the opportunities for more in-depth research activities that should be conducted in the future. Three of these recommendations were specifically relevant to the current *Professional Pathways* project (Partridge et al., 2011, pp,98-100):

- The need for further research to examine the nature and context of Australia's information education programs
- The need for further research to examine the pathways and qualifications available for entry into the Australian information sector, to ensure relevance, attractiveness, accessibility and transparency
- The need for strategies and forums that support the information sector working together to conceptualise and articulate their professional identity and educational needs.

The first significant body of the work in the *Professional Pathways* project, culminating in this *Technical Report*, has involved the major literature review and environmental scan which endeavours to ensure that ALIA has a sound and reliable evidence base to support the decisions the association may make about alternative professional pathways. It is important that the ways forward align with current and emerging developments in the LIS field internationally, that it resonates with similar initiatives in other professions, and that it takes into account the evolving trends in professional learning.

The comprehensive literature review and environment scan has sought to ensure that the requisite background research has been undertaken to locate, analyse and synthesise the relevant academic and professional resources to guide the thinking about new pathways into the profession. It is hoped that the detailed discussion will help ALIA develop effective strategies to help remove the barriers for entry for people from non-LIS fields, to create entry points at multiple career stages, and to create incentives for people to seek LIS professional status through qualifications, training and expertise.

2.   Skills frameworks: core professional competencies

Skills or competency frameworks refer to listings of knowledge, skills, abilities, and other characteristics that contribute to successful work performance (Campion et al. 2011). Many types of commercial organisations develop competency frameworks as an employee management process, and beyond this, professional bodies prepare frameworks to identify and map a particular skills landscape and/or to support the development of academic curricula for the appropriate professional qualifications.

There are abundant definitions of the key concepts of knowledge, skills and competencies in the academic and professional literature. For the purposes of this report, the definitions have been drawn from the *European Qualifications Framework for Lifelong Learning*, which seeks to promote a common language between education and training, and the labour market (EU, 2018a).

Knowledge: "The outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study" (EU, 2020, a). It is further explained that "knowledge is applied and put to use in skills and competences" (EU, 2020a).

Skill: "The ability to apply knowledge and use know-how to complete tasks and solve problems" (EU, 2020b). A distinction is made between 'cognitive skills' which involve the use of logical, intuitive and creative thinking, and 'practical skills' which involve manual dexterity and the use of methods, materials, tools and/or instruments (EU, 2020b).

Competence: "The proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development" (EU, 2020c).

Although the term 'competency' has been used in the applied psychology literature for almost half a century (Campion et al., 2011, p.259f.), the literature review conducted by Dole highlighted the "ambiguity and confusion over the definition and nature of 'competencies'" (2013, p.473). Beyond the 'hard skills' or practical and technical skills, emphasis has also been placed on 'soft skills' or 'personal attributes'. Fisher (2001) presented three categories of 'competency': 'professional competencies' (skills and knowledge), 'personal competencies' (traits, attitudes and behaviours) and 'educational competencies' (obtained through the study of a body of knowledge). Corrall agreed that "a mix of specialist, generic, personal and contextualised knowledge" (2005, p.26) was an imperative for information professionals, while in the research undertaken by Partridge and Hallam (2004) the metaphor of the double helix was used to present the "intertwined and complementary" areas of discipline knowledge and generic capabilities to describe the 21st century information professional.

Frequently the terms 'skill' and 'competency' are used as synonyms, although in the EU's documentation, a distinction in scope has been noted: the term 'skill' tends to be contextualised by a specific setting and by defined tasks, whereas 'competence' has a broader connotation and "refers typically to the ability of a person – facing new situations and unforeseen challenges – to use and apply knowledge and skills in an independent and self-directed way" (EU, 2020c). In practice, as the terms 'skills framework' and 'competency frameworks' tend to be used interchangeably, no specific distinction is made in this report. The Canadian Association of Research Libraries (CARL) uses the term 'competency profile', which is used by many professions to refer to "listings or groupings of

knowledge, skills and mindsets that define and contribute to professional success". The word 'mindset' is then defined as "a collection of attitudes, inclinations, or habits of mind useful in achieving an outcome" (CARL, 2020, p.3).

A selection of skills frameworks that have been developed to identify and describe the knowledge, skills and attributes required for education and practice in the library and information science (LIS) field are examined. The primary focus is on the skills frameworks that have specific relevance to Australia, but those published in countries that typically have closer social, cultural and political connections with Australia, for example New Zealand, the United Kingdom (UK), Canada and the United States (US) are also examined. Endeavours to locate current and relevant frameworks from a wider spectrum of countries and/or regions proved challenging, and the lack of comparable resources is acknowledged to be a limitation of the study.

As part of the IFLA Building Strong Library and Information Science Education (BSLISE) project, the Working Group investigated the availability of core competencies across the world, with only 11 responses (Chu & Raju, 2018). The core competency frameworks in the US (ALA), UK (CILIP) and Australia (ALIA) were highlighted; positive responses were received from Malaysia, Peru and Italy, but no documents were referenced. Sacchanand (2015) reported The Malaysian competency standard was developed in 2007 to support the course accreditation processes undertaken by the Malaysian Qualifications Agency, but it is unclear whether the standard has been updated since then. In the ASEAN nations, discussions on the quality assurance of LIS education have been held since 2002, but the inherent variations in LIS programs, degrees and courses have been a major constraint. The absence of competency frameworks and the different priorities for knowledge and skills has meant that there is little commonality across the curricula offered by the different Asian education institutions (Sacchanand 2015).

Looking to the African continent, one example is the *LIS professional competency index for the higher education sector in South Africa* (Raju, 2017), developed as part of a nationally funded project. The framework includes a blend of professional knowledge, generic skills and personal attributes, and is now used by academic libraries in South Africa (Committee of Higher Education Libraries of South Africa, 2021).

In Europe, Horvat et al. (2017) noted that it was "a formidable task" (p.504) to try to describe the patchwork of LIS education and training across the continent: "the variety of curricular approaches, thematic orientations, subject emphases and 'paradigms' represented by LIS academic programs is conspicuous" (Horvat et al., 2017, p.504), while the picture of academic quality assurance practices and accreditation of LIS programs was "no less motley" (p.505). In the review of LIS education and qualifications in Europe, reference is made to the "emerging conceptual frameworks" relating to digital libraries, with "some European LIS educators [showing] an interest in discussing and defining the role and professional competences of the digital librarian" (Horvat et al., 2017, p.529). Nevertheless, only one skills framework is mentioned: CILIP's PKSB, "which brings together the areas of professional and technical expertise together with the generic skills and capabilities required by those in the library, information and knowledge management community" (Horvat et al., 2017, p.524). The PKSB is also used by the Library Association of Ireland in its course accreditation activities.

The academic and professional literature reveals that, beyond skills frameworks, there are other approaches to exploring and articulating the knowledge and skills required by library and information professionals, for example through competency analyses, the appraisal of job advertisements and position descriptions, and capturing the perceptions of people employed in the LIS sector through surveys, focus groups and interviews. While acknowledging the role of ICTS in library work, Myburgh and Tammaro (2013) warn against relying too heavily on job advertisements to identify core competencies, especially for digital librarians, as there is an inherent danger of emphasising the vocational, as opposed to the professional aspects of the position.

In this chapter, the discussion covers some of the principal skills frameworks that present the 'core' professional competencies for LIS professionals. Chapter 3 considers the frameworks for the range of skills that are typically required for staff employed in specific fields of practice, e.g. public libraries, academic and research libraries, and special libraries. The skills requirements for school libraries and in the allied professions such as archivists and records managers are noted. An overview of some of the skills for future professional practice for LIS professionals is presented in Chapter 4.

The development of core competencies has been identified as a useful way "to assess the requirements, strengths, capabilities, and potential contributions of individuals in an organization" (Dodd, 2019, p.685). The notion of 'core' is often applied to describe the knowledge, skills and attributes that *all staff* must have, regardless of their role or rank in the organisation. It has been argued that, as competencies form "the very foundation of a profession" (Dole, 2013, p. 473), they can play an important role in curriculum development, recruitment and retention, performance evaluations, employee promotion, staff development and career planning (Campion et al., 2011; Giesecke & McNeil, 2013).

The landscape of 'core competencies' for the LIS profession is undeniably complex. There are literally hundreds of published articles that have discussed the topic over the past 30 years: Giesecke & McNeil (2013) identified 271 articles containing the term 'core competencies' which were published in Library and Information Science Abstracts (LISA) between 1990-2011; when the search was repeated for the period 1990-2021, the number of articles increased to 473. Amongst all this professional discourse "there is no standard, universally accepted definition of core competencies in libraries" (Dole, 2013, p.473); equally well, "it is not likely that one set of core competencies would be accepted as universal by all information professionals and institutions" (Dodd, 2019, p.690). Nevertheless, many library associations have developed competency frameworks in order to define the specific domains of professional practice. While this approach has traditionally helped shape LIS academic programs, there are arguably challenges in addressing the ever-evolving diversity of knowledge and skills required in library and information services (Dodd, 2019).

The anatomy of a competency model has been presented as a multi-part concept: (a) a descriptive label or title; (b) a definition, usually describing how the competency appears on the job in detailed behavioural terms; and (c) a detailed description of the levels of proficiency on the competency" (Campion et al., 2011, p.239). Significantly, a sector-wide skills framework will require a generalised vocabulary which does not use any specific terminology that may be prevalent in individual organisations. The framework may need to encompass 'fundamental' or commonly used, cross-job competencies as well as 'technical' or more specific job-specific competencies. The scope, structure and content of the various LIS skills frameworks that are described in this chapter of the report illustrate the many different ways in which professional knowledge, skills and competencies can be presented.

2.1   Australian Library and Information Association (ALIA)

In 2018, the Board of ALIA established a new Education Advisory Committee (EAC) which was tasked with the review of the Association's policy documents relating to education and qualifications:

- *ALIA's role in the education of library and information professionals*
- *Courses in library and information science*
- *Professional development for library and information professionals*
- *Employer roles and responsibilities in education and professional development*
- *Library and information sector: Core knowledge, skills and attributes*
- *Foundation knowledge, skills and attributes for information professionals working in archives, libraries and records management.*

Following their review and revision of four of the policies, the EAC's focus turned to the remaining two policy documents, *Library and information sector: Core knowledge, skills and attributes* and *Foundation knowledge, skills and attributes for information professionals working in archives, libraries and records management*. As the purpose of the *Foundation knowledge, skills and attributes* policy was of central importance to the reciprocal course accreditation processes conducted with the two professional bodies, Australian Society of Archivists (ASA) and Records and Information Management Professionals Australasia (RIMPA), the responsibilities for course accreditation sat with the ALIA Education Team. It was therefore agreed that the review of this policy lay beyond the remit of the EAC.

The EAC undertook a comprehensive review of the policy *Library and information sector: Core knowledge, skills and attributes*. The original policy, focusing on the 'core' skills, had originally been introduced in 1998 and was subsequently reviewed in 2009, 2012 and 2014. Members of the EAC believed that, given the increasing range of skillsets required across the LIS sector and the complexity of considering the ongoing maturing of skillsets throughout an LIS professionals' career, the focus of the revised policy should be on 'foundation' knowledge. Accordingly, the EAC's review work led to the development of a new policy document entitled *Foundation knowledge for entry-level library and information professionals* (ALIA, 2020e), which was ratified and adopted by the ALIA Board of Directors in December 2020.

The significantly updated policy outlines "the foundation knowledge required by an entry-level graduate employed in the library and information sector" (ALIA, 2020e). It is stressed that, as ALIA accredits courses offered by both the VET sector (Diploma) and the higher education sector (Bachelor, Postgraduate Diploma and Master's degrees), the specific levels of knowledge and understanding should be interpreted within the scope of the language and descriptors used in relation to the different levels of the Australian Qualifications Framework (AQF, 2013).

As the policy presents "broad areas of professional understanding" (ALIA, 2020e), it is anticipated that academic documents, such as program curricula and subject guides, will provide a more granular view of the diverse skillsets. Guidance is provided to encourage educators to ensure that students are introduced to the full range of concepts during their studies; it is not expected that upon completion of their course, graduates will have gained practical skills and expertise in all the domains of knowledge that are listed. It is emphasised that students will need to confidently meet the challenges of the changing nature of work, to accommodate innovation and change in practice over time, and to acknowledge that the range and scope of knowledge required will be determined

by the specific context of professional practice. Significantly, all LIS professionals should have a strong commitment to ongoing professional learning to support their individual career journey.

The domains of foundation knowledge for entry-level LIS professionals, with the overarching scope of the knowledge and understanding required by graduates, are summarised in Table 1.

Table 1: *Foundation knowledge for entry-level library and information professionals* (ALIA, 2020e)

Domain of knowledge	Scope
The information environment	The historical context and the changing nature of library, information and knowledge environments
Information services	The delivery of data, information and knowledge services that connect users with the resources they need at the right time and place, and in the right format
Information management	The acquisition and management of the multiple information formats used by individuals and organisations
Literacies and learning	The importance of literacies and learning to connect individuals and communities to ideas and knowledge creation
Digital technologies	Information and communications technologies that are relevant to library and information practice
Community engagement	The strategies and practices that contribute to the development of strong communities
Leadership and management	The principles of leadership and management
Research	The activities required to undertake evidence-based practice, to analyse, interpret and present research findings, to engage with open access and scholarly communications and to provide research support services
Behavioural skills	The awareness and application of strong behavioural skills to successfully interact with others in the workplace and to contribute to a positive and productive work environment
Professionalism	The commitment to maintaining the currency of professional knowledge and practice and to upholding professional standards and values

Each domain of knowledge presents a list of topics which are typically relevant to the field of practice: the focus is conceptual, rather than detailed and time-bound. As an example, the topics listed for the domains of Information services, and Behavioural skills are presented in Table 2.

Table 2: Examples of domains and topics in the *Foundation knowledge* policy (ALIA, 2020e)

Domain	Topics
Information services	- Client engagement - Information needs analysis - Information seeking behaviour, user experience and accessibility - Retrieval, evaluation and synthesis of information - Reference and research consultancy services - Customised delivery of resources tailored to target client groups
Behavioural skills	- Self-awareness and management - Communication skills - Interpersonal skills - Relationship building - Collaboration - Empathy - Conflict resolution - Intellectual curiosity, flexibility and adaptability - Creative and positive thinking - Critical thinking and problem solving - Resilience - Critical reflective practice - Enthusiasm for lifelong learning and new roles

The ten domains of knowledge are framed by some of the characteristic features of the library and information sector in Australia (ALIA, 2020e), where a diverse workforce operates within and across the physical and digital worlds to:

- Promote and uphold the core values of the LIS profession
- Understand, respond to and anticipate cultural, recreational, social, information and learning needs of clients, organisations and society
- Acknowledge and respect the significance and diversity of the histories, cultures and heritage of Australia's Aboriginal and Torres Strait Islander peoples
- Undertake the effective curation of data, information and knowledge through the processes of description, storage, organisation, retrieval, dissemination and preservation, in order to ensure that it can be freely accessed and used by clients
- Develop, deliver and evaluate information and recreational facilities, services, programs, sources and products to meet client needs
- Envision and plan future directions for the sector
- Advance library and information science in its adaptability, flexibility and autonomous application to information and recreational services
- Engage with clients, communities, other professions and industries.

The full ALIA policy document is presented in Appendix 1.

2.2   Library and Information Association of New Zealand Aotearoa (LIANZA)

The Library and Information Association of New Zealand Aotearoa (LIANZA) first issued a competency framework which presented the Domains of Professional Practice and the Bodies of Knowledge (BOK) in 2006. This framework was subsequently reviewed and revised to provide greater clarity about the scope of the individual BOKs and their relevance to professional practice. The updated documentation was released in 2013 (LIANZA, 2013a).

The Domains of Professional Practice represent the cornerstones of effective LIS practice:

- Professional knowledge
  - Extending professional knowledge and skills
- Professional practice
  - Applying professional skills
- Professional communication
  - Sharing knowledge and expertise and developing professional relationships
- Professional leadership
  - Displaying leadership and initiative, depending on the position.

The Bodies of Knowledge outline "the core areas of competency which form the particular knowledge base of library and information professionals in New Zealand" (LIANZA, 2013a). It is noted that while LIS professionals should be familiar with all areas of competency, they are expected to develop more in-depth knowledge within the particular area(s) of specialisation relevant to their employment. Table 3 provides an overview of the eleven BOKs. The full framework is presented in Appendix 2.

Table 3: The Bodies of Knowledge (LIANZA, 2013a)

Body of Knowledge	Scope
BOK 1: The information environment, information policy and ethics	The history and changing nature of the information environment; the legal, policy and ethical issues relevant to information work; the significance of te Tiriti o Waitangi (Treaty of Waitangi) to the development and delivery of library and information services and resources
BOK 2: Generating, communicating and using information	How information is created, presented, disseminated and used
BOK 3: Information needs and design	Identifying and evaluating customer needs; designing and delivering information services
BOK 4: The information access process	How people find information, information literacies; benefits of reading and lifelong learning
BOK 5: Organisation, retrieval, preservation and conservation	Describing, categorising and storing information; principles of preservation and conservation; designing relevant information systems
BOK 6: Research, analysis and interpretation of information	The nature, methodology and practice of research; evaluating the quality and relevance of research; undertaking research by gathering and analysing data and applying findings to professional practice

Body of Knowledge	Scope
BOK 7: Application of information and communication technologies (ICTs)	The changing nature of ICTs and their application; Identifying and evaluating ICTs
BOK 8: Information resource management and knowledge management	Collection development and collection management; definitions, concepts and frameworks of knowledge management
BOK 9: Management in information organisations	Strategic, business and operational planning; managing finance, people and resources; governance structures and stakeholder relationships
BOK 10: Assessing service effectiveness	Ways to assess the efficiency and effectiveness of, and recommending improvements to, library and information facilities, products and services for continual improvement and future proofing
BOK 11: Awareness of Indigenous knowledge paradigms, which in the New Zealand context refers to Māori	The importance, diversity and structure of Māori knowledge (mātauranga Māori); the Māori processes, philosophies and language (kaupapa, tikanga and te reo Māori) that are intrinsic in Māori knowledge frameworks; the importance of Māori research methodologies when assisting Māori clients with their information needs

To assist with understanding and interpreting the BOKs, LIANZA introduced six clusters which seek to draw together groups of correlated competencies. The clusters therefore represent more generalised areas of practice, without being separately defined.

- BOK Cluster 1: Understanding the information environment
- BOK Cluster 2: Understanding information needs, generation and access
- BOK Cluster 3: Understanding information resource and knowledge management
- BOK Cluster 4: Understanding information and communication technologies
- BOK Cluster 5: Understanding management in information organisations
- BOK Cluster 6: Understanding Māori knowledge paradigms.

Members of LIANZA draw on the Domains of Professional Practice, the individual BOKs and the clusters of BOKs when applying for professional registration or revalidating their professional status. The professional registration and revalidation processes for members of LIANZA are discussed in section 8.1.2 of this report.

2.3   Chartered Institute of Library and Information Professionals (CILIP)

The Chartered Institute of Library and Information Professionals (CILIP) originally developed the Professional Knowledge and Skills Base (PKSB) in 2014 as a resource to define the ethics, values and skills that unite the library and information profession. A refreshed version was released in September 2021. The PKSB is described as the "sector skills standard" for the information, knowledge, library and data profession: it presents an outline of "the broad range of skills and knowledge required by those working in the information profession" (CILIP, 2021a, p.1). It seeks to provide a common language within and beyond the sector and to serve as a benchmark for transferable skills (Cornish, 2020).

The structure of the PKSB comprises three elements:

- Element One: Core principles
- Element Two: Professional expertise
- Element Three: Generic skills.

CILIP uses the graphic image of a wheel to illustrate these different elements (Figure 1).
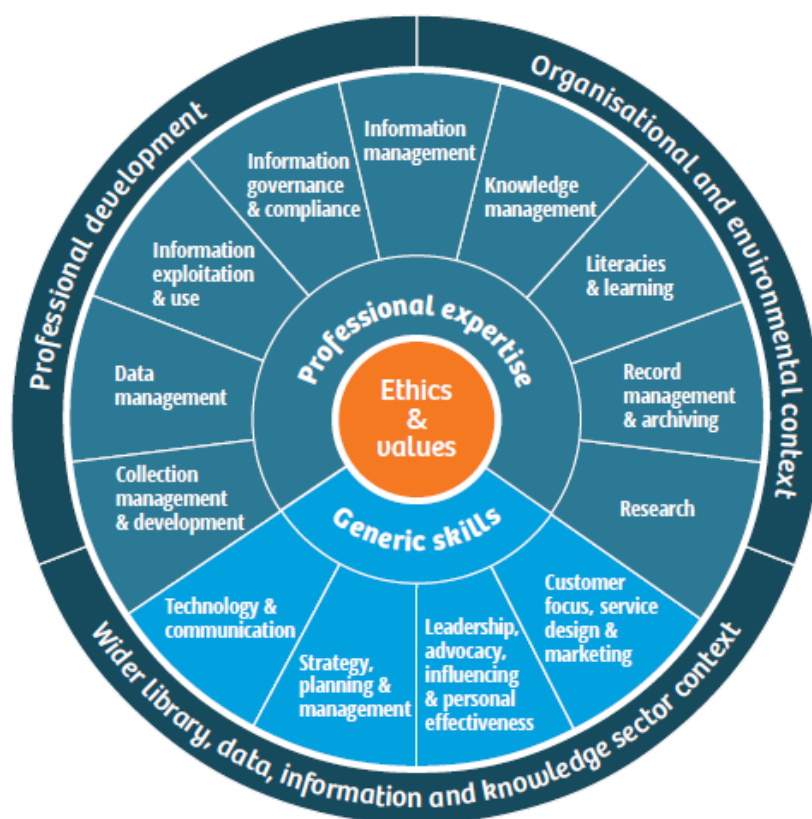
Figure 1: Professional Knowledge and Skills Base (PKSB) (CILIP, 2021a)

CILIP strongly believes that professional ethics and values are central to the library and information profession: these are emphasised by being placed at the heart of the wheel. While the details of CILIP's ethical framework (CILIP, 2018a) are discussed in Chapter 5, it can be briefly summarised as encompassing seven concepts: human rights, equalities and diversity; public benefit; impartiality; preservation; confidentiality; intellectual freedom; information skills and information literacy (CILIP, 2018a).

The specific areas of professional expertise and generic skills form the next ring within the circular image, divided into the various spokes of the wheel. There are nine fields of professional expertise and four domains of generic skills. These 13 areas of knowledge and skills are then encircled by three additional core principles to form the perimeter of the wheel: the wider context of the library, data, information and knowledge sector; the more immediate context of the professional's organisational or environmental context; and commitment to professional development. In the updated version of

the PKSB (CILIP, 2021a), the previously combined skills areas of Information Management and Knowledge Management have been separated out, significant changes were made within the Data Management skills area, and a more granular approach was adopted for the various 21st century literacies in the area of Literacies and Learning.

Each of the three elements is explained in the text of the PKSB document. Element One captures both the hub and the perimeter of the wheel, while Element Two (professional expertise) and Element Three (generic skills) are combined to form the spokes (Table 4).

Table 4: Elements of the Professional Skills and Knowledge Base (PKSB) (CILIP, 2021a)

Element One: Core principles	
Area	**Scope**
Ethics and values	The ethical principles that underpin the library, information and knowledge profession, as presented in CILIP's Ethical Framework
Professional development	Committing to keep knowledge and skills up to date; identifying areas for personal improvement; undertaking appropriate development activities and applying learning in practice; applying a reflective approach to both practice and development
Organisational and environmental context	Examining the organisational or environmental context of your service, evaluating service performance and considering ways to implement or recommend improvement
Wider library, information and knowledge sector context	Enhancing skills and informing practice through expanded knowledge of the wider library, data, information and knowledge profession; reflecting on areas of common interest or difference and contributing to the body of shared professional knowledge
Element Two: Professional expertise	
Area	**Scope**
1. Collection management and development	The process of planning, delivering, maintaining and evaluating a programme of stock acquisition and management which meets current objectives and builds a coherent and reliable collection to allow for future development of the service. Includes collection management, resource selection and acquisition, licensing and planning for continued future use.
2. Data management	Organising and handling data to meet the needs of organisations and the requirements of their information and knowledge management systems. Includes ensuring data quality; legal and regulatory compliance; and developing procedures, processes and plans to identify data needs; and sourcing, acquiring, collecting, organising and presenting data.
3. Information exploitation and use	Combining information skills, information content and knowledge to meet the needs of the user community, for example researchers, academics, communities, individuals, businesses or government. Includes providing enquiry and search services, bibliometrics, abstracting and promoting collections.

	Area	Scope
4.	Information governance and compliance	Developing and adhering to policies and regulations regarding processes and procedures for information use, while retaining an appropriate balance between information availability and information security. Includes knowledge of information law, privacy, copyright, intellectual property and licensing as well as issues relating to information risk management, information ownership and accountability.
5.	Information management	Organising all types of information and other resources including the development and use of tools, strategies and protocols, and enabling these resources to be organised, searched and retrieved effectively. Includes cataloguing and classification, metadata and thesauri, subject indexing and database design. Awareness of how information theory underpins practical application.
6.	Knowledge management	Collecting, organising, storing, sharing and exploiting organisational knowledge assets; ensuring that these assets remain available for future use. Includes capturing and recording knowledge, reflecting on results and sharing knowledge, skills and outcomes for the benefit of others.
7.	Literacies and learning	Understanding the attitudes, values and skills needed to become literate. This will include reading and information literacy. In addition, other literacies, closely related, which are specific to communities, formats or purpose. Includes digital literacy, health literacy, academic literacy, media literacy, civic literacy, political literacy and numerical literacy.
8.	Records management and archiving	Recording, organising and preserving information records held in a range of formats and media in an organisation, and continuing to evaluate them for retention or disposal based on their format, relevance, usage and legal requirements. Includes storage and retrieval of records and collections, digitisation, curation and preservation.
9.	Research	Using research processes, research techniques and knowledge of information resources to conduct and support organisational, client or individual research projects. Conducting research to further the body of knowledge about the information profession, and research to better understand how stakeholders interact with our services and profession.
Element Three: Generic skills		
	Area	Scope
10.	Customer focus, service design and marketing	Understanding user needs, shaping library, data, information and knowledge services to meet those needs and using appropriate methods to inform customers of accessibility, value and the benefit of the resources and services. Includes knowing the customer, planning metrics, evaluating feedback, applying user centric design principles and promoting services. Identifying and communicating with stakeholders.

Area	Scope
11. Leadership, advocacy, influencing and personal effectiveness	Providing active leadership by inspiring and managing themselves and teams, both inside and outside the organisation. Also by promoting the positive value of inclusive library, data, information and knowledge services across the organisation and society. Applicable at all levels, it includes leading, inspiring and empowering others, influencing key stakeholders and understanding external frameworks.
12. Strategy, planning and management	Setting long-term goals and objectives; managing their planning and delivery with appropriate governance within financial and legal constraints. Ensuring that strategies and priorities are in line with and support business objectives. Includes knowledge of business, operational and financial planning and management.
13. Technology and communication	Using a range of digital technologies and resources to manage information, data and knowledge and deliver successful services. Using effective communication skills including oral, writing and presentation skills, networking and relationship building with individuals and groups.

A further level of detail is provided for the each of the domains of professional expertise and generic skills, with between six and 12 topics listed for each skillset. Examples for the professional expertise area of Collection management, and the generic skills area of Customer focus, service design and marketing are presented in Table 5.

Table 5: Examples of skill areas and topics in the PKSB (CILIP, 2021a)

Professional expertise	
Area	**Topics**
1. Collection management and development	1.1 Collection management 1.2 Collection strategy 1.3 Selection of materials and resources 1.4 Legal deposit 1.5 Collection evaluation and information quality 1.6 Collection promotion
Generic skills	
Area	**Topics**
10. Customer focus, service design and marketing	10.1 Customer service skills 10.2 Consulting and consultancy services 10.3 Community engagement in planning 10.4 Engaging with stakeholders 10.5 Service innovation, development and design 10.6 Quality management 10.7 User experience (UX) 10.8 Marketing 10.9 Events programming and management

A copy of the introduction to and overview of the PKSB (CILIP, 2021a) is presented in Appendix 3. Members of CILIP have access to additional descriptions relevant to the areas of knowledge and skills, as well as a comprehensive range of PKSB tools.

It is important to note that there are distinctions in terms of the purposes of ALIA's *Foundation knowledge* policy document (ALIA, 2020e) and CILIP's PKSB (CILIP, 2021a). The ALIA document explicitly states that it encompasses the knowledge required by an "entry-level graduate" who has successfully completed an ALIA-accredited LIS course (ALIA, 2020e). As noted earlier, ALIA accredits courses offered at different academic levels, which means that the graduate's knowledge and understanding will be guided by "the language and descriptors pertaining to the relative levels of the Australian Qualifications Framework" (AQF, 2013). Audiences for the skills framework will include LIS professionals, employers, educators, students and prospective students.

CILIP's PKSB, however, has a broader remit as "it represents a wide spectrum of library and information professionals from public and school librarians to embedded information and knowledge managers in government and commerce" (Berney-Edwards, 2018, p.7). The value of the PKSB is demonstrated through the central role it plays across the multiple dimensions of the LIS profession:

- For individual members
  - As the framework for CILIP Professional Registration (CILIP, 2021b)
    - Certification, Chartership and Fellowship applications
    - Providing evidence of CPD for Revalidation
  - As a self-assessment tool to guide personal and career development
  - As a resource to demonstrate skills and expertise to employers
- For employers
  - As a framework for skills analysis, staff development and workforce planning
- For learning providers
  - As the accreditation framework for academic and vocational qualifications and training activities
- For partnerships
  - As the basis for apprenticeship development for the library, information and knowledge sectors
  - As the basis for an accreditation framework for public library services.

As a result of the need to support the spectrum of industry professionals through the CILIP Professional Recognition process, i.e. applicants for attainment of Certification, Chartership and Fellowship, and Revalidation, the PSKB offers a whole-of-career focus. It considers the skillsets which relate to the expansive range of the library, data, information and knowledge professions, with the areas of professional expertise required for information management, data management, knowledge management, information governance and compliance, and records management and archives included in the PKSB. One of the principal outcomes has been the shift away from an earlier reliance on academic qualifications for the formulation of professional status, to emphasise the critical role of knowledge, skills and expertise in shaping professional identity.

In Australia, on the other hand, a number of professional bodies represent people employed in the various fields of the library, data, information and knowledge professions. The Australian Society of Archivists (ASA) presents its own specialised professional capabilities (ASA, 2021a), while the Records and Information Management Professionals Australasia (RIMPA) supports records

management professionals (RIMPA, 2021a). It should be noted, however, that ALIA, ASA and RIMPA have arrangements for the joint accreditation of academic programs, underpinned by the policy document *Foundation knowledge, skills and attributes relevant to information professionals working in archives, libraries and records management* (ALIA, 2020f). Other industry bodies are aligned with specialised professional communities such as the Australian Society for Knowledge Managers (AuSKM, 2021) and Information Governance ANZ (InfoGovANZ, 2021).

In the UK, the Quality Assurance Agency (QAA) is the government body charged with oversight over the quality and standards in the higher education sector. The QAA manages the *Subject benchmark statements* which describe the field of study and the academic standards expected of graduates across the country (QAA, n.d.). The subject benchmark statements are reviewed on a cyclical basis. The current version of the *Subject benchmark statement for librarianship, information, knowledge, records and archives management* was released in 2019. A list of members of the review committees and reference groups (2000, 2007, 2015, 2019) for this subject benchmark statement reveals strong representation from the universities which offer library and information courses, the professional bodies (CILIP & ARA) and employers (QAA, 2019, pp.18-19).

The document provides an introduction to the field of librarianship, information, knowledge, records and archives management, which are described as being "closely related subjects which together encompass the principles and practice of knowledge representation, knowledge organisation and communication" (QAA, 2019, p.5). The purposes of the subject benchmark statement are to enable and assist (p.3):

- Students to understand what the subject entails and to choose a course appropriate for their personal career plans
- Employers and other stakeholders to understand what knowledge and skills may be expected from graduates in the subjects that use the subject benchmark statement
- Higher education providers in designing, developing and approving new courses in the subject area and related degrees
- Providers of such courses who wish to develop or amend their courses.

Reference is made to the accreditation activities of CILIP and ARA. The overarching areas of understanding that graduates should attain are listed (QAA, 2019, p.4):

- The value of knowledge, information and records to individuals, organisations, groups and society
- The wider context in which information professionals operate
- The processes, institutions, and infrastructure associated with the creation, acquisition, management, organisation, dissemination, access to curation, storage and retrieval of knowledge and information in all media and formats
- Theories relating to the usage and management of individual and aggregated information objects in all media and formats
- Theories and frameworks that may be used to design information, records and archives services and systems that are fit for purpose and sustainable
- Theories and practices relating to the capture, managing and sharing of tacit and explicit knowledge
- Information governance and legislative and regulatory compliance, including such aspects as ethics, copyright, risk management and accountability

- How to identify and meet the (actual and potential) needs of individuals, communities and organisations, in relation to learning
- Reading and reader development, information literacy, and other related lifelong learning requirements
- Relevant technologies underpinning the design of, and in support of, information, records and archives services or systems
- How to conduct research, evaluation and service audit, and how to appraise the evidence from such studies
- What may be achieved by different quantitative and qualitative methodologies and techniques, and when a particular methodology or technique is most appropriately used.

The subject benchmark statement presents a section on the subject knowledge, understanding and application, which comprises seven areas, each with a number of topics or competencies (QAA, 2019, pp.7-9):

- Creating, capturing and organising knowledge and information
- Managing and exploiting knowledge and information
- Managing and developing collections
- Using information technology
- Ethics, information governance and compliance
- Providing information solutions
- Reading, literacies and training.

The following section of the document outlines the various abilities and competencies that graduates should develop during their studies, with "those graduating at master's levels… expected to demonstrate higher levels of skills, especially of leadership, critical thinking, research and analysis" (QAA, 2019, p.10).

- Knowledge acquisition and study
- Research skills
- Leadership and advocacy
- Management, planning and strategy
- Customer focus, service design and promotion
- Communications and IT.

The headings for the knowledge areas and skills, and the terminology used in the document, are very close to the previous version of CILIP's PKSB, published in 2013. It will be interesting to see whether the subject benchmark statement undergoes further review to ensure that it is aligned with the updated PKSB (CILIP, 2021a). A copy of the detailed subject benchmark statement is presented in Appendix 4.

2.4   American Library Association (ALA)

The *Core Competences of Librarianship* document developed by the American Library Association (ALA) was released in 2009. The ALA states that the "Core Competences of Librarianship define the knowledge to be possessed by all persons graduating from ALA-accredited master's programs in library and information studies" (ALA, 2009). The core competencies are categorised into eight fields of professional knowledge and practice:

1. Foundations of the profession
2. Information resources
3. Organization of recorded knowledge and information
4. Technological knowledge and skills
5. Reference and user services
6. Research
7. Continuing education and lifelong learning
8. Administration and management.

No explanatory statements are provided to outline the scope of the eight categories, but each one presents between three and seven different competency areas. These principally focus on concepts, principles, methods and techniques: a graduate of an ALA-accredited academic program is expected to know and, where appropriate, be able to apply the range of these competency areas. It was noted that very few generic, behavioural or soft skills have been included in the framework: only problem solving and critical thinking, and verbal and written communication are listed in the first category, Foundations of the profession.

To support the ALA's view that library and information professionals who work in the different fields of the profession, e.g. school, academic, public, special and government libraries, as well as in other information and knowledge contexts, will require specialised knowledge beyond the core competencies, a listing of a number of knowledge and competencies statements issued by professional associations and organisations in the US is provided on the website (ALA, 2021a). This listing highlights a range of specialised competency areas, such as library and information professionals working in art libraries, special collections, music libraries, teen services, acquisitions, cataloguing and metadata etc. It is emphasised that "specialized learning experiences are built on a general foundation of library and information studies" (ALA, 2021a).

As part of a recent project to update the 2009 document, the ALA has released a draft of the *2021 ALA core competencies* (ALA, 2021b) for review and feedback. In its current form, the draft framework comprises nine categories. While eight categories reflect those categories included in the original document (ALA, 2009), with some changes to the nomenclature, a ninth category has been added: Social Justice. It is stressed that the attributes of social justice have been intentionally included, not only as a competency in itself, but also through the concepts of social justice, equity, diversity and inclusion being incorporated into the full range of competencies (ALA, 2021b, p.1).

The term 'library professionals' is used to broadly include all people working in a position in a library or information environment where a degree in LIS is required. It is acknowledged that the term naturally applies to staff working in libraries, but beyond this, they could also be employed as an archivist, data scientist, information specialist, library/archival technician etc. It is stated that the core competences relate to the knowledge required by early-career professionals, for example through completion of an LIS degree program or when starting a new job.

In this revised version of the core competencies, a rationale has been provided for each category of knowledge and skills (Table 6). An overarching rationale indicates that graduates from ALA-accredited programs will be ready to enter the library and information professions, but they will need to develop the listed knowledge and skills in practice. The competences are presented as "foundational skills and understanding".

Table 6: *Draft core competences of librarianship* (ALA, 2021b)

Competence	Rationale
1. Gateway knowledge	[Includes ethics and values; history of information, libraries and librarianship; policies and trends impacting on libraries at all levels; relevant legal frameworks; advocacy; critical thinking and problem solving; verbal and written communication; hold current certification, degree and/or licensure requirements of specialized areas of the library profession]
2. Information resources	Library professionals work with information resources in various stages and in various capacities. Emerging information resources constantly re-shape library and information practices and all library professionals should be able to describe and work with a variety of information resources.
3. Lifelong learning and continuing education	Libraries and their communities are continually evolving. As such, continuing education, professional growth, and a commitment to lifelong learning are key components of a well-informed library professional
4. Management and administration	Library professionals work with members of the administration and management team to ensure that the information setting meets the needs of the community.
5. Organization of recorded knowledge and information	All library professionals should have an understanding of the principles, methods, tools, and goals of organizing and representing information and knowledge across cultures and identities. Library professionals should have essentials skills to adapt to technological changes, revise descriptive/classification standards, solve problems, and make ethical decisions with recorded knowledge and information.
6. Reference and user services	Reference and user services are the connection between library users and the information, collections, and services that libraries provide, across all types of libraries and library environments.
7. Research and evidence-based practice	Library professionals who graduate from an ALA-accredited library program need to be able to discover, interpret, and generate research in relation to efforts that support their institutions, the profession, and/or their own professional development. Library professionals should be able to demonstrate a range of data, evidence and research skills that include, but are not limited to, the application of research design and methods, and an understanding of methods of data analysis and the application of research tools.
8. Social justice	Social justice is defined as both a process and a goal that includes the knowledge and skills necessary for library professionals to create library collections, services, personnel, facilities, and programs that foster equitable access to and participation of all people to utilize the library. Social justice, equity, diversity, inclusion, and anti-racism competences require library professionals to work to repair past and current inequities within libraries, and to address issues of oppression, privilege and power within our libraries and between the library and its community.

Competence	Rationale
9. Technological knowledge and skills	Information settings rely on various technologies to deliver and provide services and resources. Implementation of technology varies between libraries.

Each competence area presents between three and eleven skillsets, with varying levels of scope and complexity. It is advised that the document can be used to inform the curriculum of an LIS degree program or to serve as a list of career development goals for early career library professionals, either independently or with their manager's support. The value of career-long learning is emphasised, as people will need to build on this "basic knowledge" (ALA, 2021b, p.1) to develop more advanced and specialised in their particular field of employment. The draft document, *Core competencies for librarianship* (ALA, 2021b) is provided in Appendix 5.

3.   Skills frameworks: specialised professional competencies

One of the most challenging aspects associated with the development of skills frameworks has been described as the tension "between a desire for detail on one hand and a desire for parsimony on the other (Campion et al., 2011, p.247). This challenge relates to both the number of competencies listed, as well as the level of detail used to describe each competency. The complexity is amplified by the fact that members of the LIS profession often align themselves closely to the particular field of practice in which they work, whether that might be as members of staff in an organisational unit (e.g. acquisitions, technical services, special collections, children's services etc) or in specific information settings (e.g. art libraries, music libraries, medical libraries).

The ALA provides links to a number of specialised knowledge and competency statements developed by relevant professional organisations (ALA, 2021a); many of these are also listed on the Librarianship.ca website (2021). The array of different frameworks indicates that "while there might be core competencies and foundational knowledge that cut across the information professions, there are also specialized skills and knowledge specific to different information settings and different job functions" (Saunders, 2019, p.5). Insights into the range of research activities designed to investigate specialised professional competencies are provided by Saunders in her literature review (2019, pp.4-8), where she points to the frameworks relating to many areas of practice:

- Learning commons and makerspaces
- Geographic Information System (GIS) library services
- Electronic resources
- Teaching, instruction and assessment of learning
- Research data analysis
- Assessment and evaluation
- Cultural competencies
- Management
- Leadership.

In terms of the content of skills frameworks for specialised areas of practice, two distinct approaches have been identified: there are 'comprehensive' frameworks which include the core competencies, as well as the knowledge and skills that are viewed as being relevant for a particular field of professional practice, and there are 'specific' frameworks which focus on the 'uniqueness' and the 'differences' inherent in particular skillsets. One of the key findings in this study is that the range of skills frameworks available is exceptionally broad; it went beyond the research scope to examine the skills requirements for all and every specialisation. It is emphasised that many of the skillsets required by LIS professionals working in specialised areas of practice, for example in acquisitions, document delivery or interlibrary loans, are considered from different perspectives by different agencies. As a result, the skills tend to be embedded in broader domains such as information management and information services (AALL, 2018; ALIA, 2020e), collection management and development (CILIP, 2021a, FLICC, 2011), organization of recorded knowledge and information, or reference and user services (ALA, 2021b).

Tensions can exist in areas of professional practice which span the different LIS sectors, for example information organisation. Concerns have long been expressed that the technical skills for cataloguers and metadata librarians are downplayed or even ignored by library educators and

library managers (A. McCulloch, personal communication, January 16, 2022). It has been argued that the skills frameworks published by library associations and industry bodies do not accurately reflect the need for a strong grounding in metadata creation and maintenance, ontologies, database design, systems architecture, repository management etc. Although Traill and Patrick (2021) note that "there is no well-defined body of knowledge or competency list for library metadata analysis, leaving library staff with analysis-related responsibilities largely on their own to learn how to do the work effectively", some studies of the "interdisciplinary" skills required (Szmodis, 2021), based on professional discussions, focus groups, surveys and job advertisements, have been examined (ACLTS, Cataloging Competencies Task Force, 2017; Geckle & Nelson, 2017; ALA MAGERT, 2017; Smith-Yoshimura, 2020). A number of educational pathways, which blend academic study and industry experience, have also been discussed (Mooney Gonzales, 2014; Tosaka & Park, 2018).

In the sections of the report which follow, attention is paid to selected frameworks pertaining to public libraries, academic and research libraries, health, legal and government library and information services. Beyond this, the skillsets of staff working in school libraries, archives and records management are discussed.

3.1   Public libraries

"The public library, the local gateway to knowledge, provides a basic condition for lifelong learning, independent decision making and cultural development of the individual and social groups… The services of the public library are provided on the basis of equality of access for all, regardless of age, race, sex, religion, nationality, language or social status." (IFLA/UNESCO, 1994). Public library leaders, managers and staff clearly have a very broad remit if they are to successfully "develop sustainable, thriving services which support and enhance the prospects of all citizens" (CILIP & SCL, 2017). In this section of the report, a selection of frameworks relevant to the public library sector is reviewed, focusing primarily on Australia, the UK and North America.

Australia

In Australia, there are currently no national competency frameworks for the public library sector. The Australian Public Library Alliance (APLA) has recently worked with ALIA to update the public library guidelines. The project sought to develop a set of "national standards and guidelines for public libraries that reflect the evolving role of contemporary public libraries" (APLA & ALIA, 2021, p.3), while recognising the need for local interpretation. The essential operational components of contemporary public libraries have been presented in the framework for Australian public libraries (APLA & ALIA, 2021, pp.8-12), with emphasis placed on the key characteristics of a service culture. Depicted as three pillars of service management, service offering and service delivery, they collectively contribute to strong levels of community engagement and to positive individual and community outcomes. The skills of public library staff are included in the pillar of service delivery.

Standards and guidelines for Australian public libraries (APLA & ALIA, 2021)

It is stated in *Guideline G11: Staffing* that "qualified, capable and motivated staff are vital to library operations" (APLA & ALIA, 2021, p.78). Although the document does not present a skills framework per se, the fundamental capabilities of public library staff are outlined:

- The ability to understand the needs of users
- Knowledge of the library's collections, programs and services, and how to efficiently access these
- The ability to communicate positively with people
- The ability to work with others in providing an effective library service
- The ability to engage with individuals and groups in the community
- Imagination, vision and openness to new ideas and practice
- Knowledge of and ability to use ICT to improve service delivery and customer use of information.

It is acknowledged that public library services benefit from a staffing mix that includes people with "formal library qualifications" (i.e. ALIA-recognised academic qualifications in LIS) who work at a senior level to undertake professional duties and to provide advice on collections, programs and services. Specialist staff, with non-library qualifications are typically employed "to enrich and support library programs or functions", as determined by specific community requirements (APLA & ALIA, 2021, p.79). Specialist areas may include, but are not limited to youth services, social work, multicultural services, education and training, information technology, digital literacies, project management, marketing and administration, or community liaison.

A number of particular professional skill sets are associated with a selected range of library services:

- Information and reference services, drawing on skills relating to:
  - Customer service
  - Reference questioning techniques
  - Location and evaluation of information and resources
  - Technical competence in the use of electronic and multimedia resources.
                                                                (APLA & ALIA, 2021, p.56)

- Readers' advisory, regarded as a core skill, with competency in:
  - Interview skills
  - Reading tips and strategies
  - Digital tools and resources that assist in reading discovery.
                                                                (APLA & ALIA, 2021, p.57)
- Local studies, requiring skills in:
  - Digital archiving
  - Multimedia skills to make collections and resources accessible to various audiences
  - Exhibition and display procedure and preparation.
                                                                (APLA & ALIA, 2021, p.53)
- Program development and delivery requires staff to be able to:
  - Understand and identify community needs
  - Develop project plans that include program budgets and timelines
  - Develop and design appropriate activities
  - Monitor and evaluate program outputs and outcomes.
                                                                (APLA & ALIA, 2021, p.58)

As public libraries develop and deliver strategies, collections, programs and services targeted at the particular needs of different groups within the community (e.g. youth services, multicultural services, social work or digital literacy), there may be value in partnering with other community and government agencies in order to "broaden the range of programs and services available to the community and expand audience engagement". Collaborative approaches have the advantage of

providing the opportunity to draw on highly specialised knowledge and skills to successfully improve the reach and accessibility of the programs and to minimise duplication of services within the community (APLA & ALIA, 2021, p.83).

State and Territory studies

In Australia, a number of studies have been conducted by the State and Territory Libraries to examine the diverse demographic, social, economic and technological factors impacting on the services provided by public libraries. Some of the issues associated with the skills, experience, recruitment and training of staff were considered in the reports (Libraries of SA, 2017; Libraries SA, 2019; NTL, 2017; Public Libraries Working Group (WA), 2017; SLNSW, 2009; SLNSW, 2014a; SLNSW, 2014b; SLNSW, 2014c; SLNSW, 2015; SLQ, 2013; SLQ, 2016a; SLQ, 2016b; SLV, 2014a; SLWA, 2018).

These studies all highlighted the value placed on the quality of public library staff whose expertise directly supports community members as they "engage, learn and participate, and [are] introduced to new ideas and technologies" (Libraries SA, 2019, p.6). Staff training and development are considered critically important (Libraries Tasmania, 2019; SLNSW, 2015), particularly since "the success of the future is predicated on the development of skilled staff" (Libraries SA, 2019, p.8). As public libraries anticipate and respond to changing community needs, the workforce needs to be multi-skilled (SLNSW, 2015; SLQ, 2008). The significance of building "the skills of staff in fostering [community] engagement and connection" (Libraries SA, 2019, p.16) is underscored, with emphasis placed on cross-cultural understanding, partnerships and networking, and facilitation capabilities (LANT, 2019; SLQ, 2013; SLV, 2014a).

The fact that libraries are becoming more creative spaces (SLV & PLVN, 2014) means that "workforce planning will be important in advancing the role public libraries can play in the creative/cultural field" (SLV & PLVN, 2014, p.68). While the call for strong digital skills was universal, the opportunities for attracting new talent into the workforce, referred to as "a-typical employee hiring" (SLQ, 2016b, p.8), should not be overlooked. An increasingly diverse staffing model (Libraries of South Australia, 2017; SLV, 2014a) will enable public libraries to draw on a portfolio of competencies that will be in demand as the staff move away from transactional roles to create value-adding roles (Davis & Finch, 2018; SLNSW, 2015; SLQ, 2013; SLWA, 2018). The sector will also benefit from strong leadership, evaluation, advocacy and outreach skillsets (SLNSW, 2015; SLV & PLVN, 2014).

In the majority of the reports, however, the theme of staff skills and expertise remains at a high level, with generalised references to "a high performing workforce" (Libraries Tasmania, 2019, p.4) or to the value of "strategically investing in workforce and volunteer training and up-skilling" (Libraries SA, 2019, p.12). Following a review of the original state-wide vision for public libraries (SLQ, 2013), the State Library of Queensland developed a new strategic vision (SLQ, 2020a). Referred to as 'the Vision', it seeks to communicate "a shared and aspirational future for Queensland public libraries and Indigenous Knowledge Centres (IKCs)" (SLQ, 2020a) and offer a toolkit which libraries can use to ensure that they realise their full potential within the communities they serve. The ability for public libraries to reach their full potential depends on, amongst other things, having a "future focused workforce" (SLQ, 2018) with skilled staff who strive to innovate in order to shape and inspire the diverse range of services they deliver.

The enabling factors that will support the achievement of the Vision include being future-ready by anticipating and responding to new trends and emerging issues, and by ensuring that library staff

have the skills and capabilities to actualise the goals that are set. SLWA (2018) states that one of the great opportunities for the sector was to "develop and implement a public libraries workforce plan with identified partners, to ensure library staff have the right skills and access to training to meet the needs of contemporary library services" (p.29).

The only example of a 'skills framework' for public library staff was outlined in the *One workforce* project. Libraries of SA presented a list of 13 groups of capabilities for the future library workforce (Libraries of SA, 2017, p.10):

- Customer service, including regular contact with community members about a diverse range of government service issues
- Community development and engagement
- Literacy development
- Community programs for all demographics
- Accessing digital resources
- Expertise in the use of technology and teaching others
- Administration and staff management
- Leadership and business acumen
- Partnership and relationship development that add value to services and innovation opportunities
- Project management
- Data collection and analysis
- Marketing and events to promote library services
- Ethics and values, empathy, teamwork, self-management and flexibility.

The information was drawn from a survey undertaken as part of a state-wide workforce planning project with the goals of defining and understanding the characteristics of the public library workforce and of supporting "the development of a framework for library leaders and decision makers to help them anticipate and prepare strategically for the future" (Libraries of SA, 2017, p.11).

A strategic approach to examining the skills required to successfully actualise a vision for the public library sector was adopted in Victoria through the *Our Future, Our Skills* project (SLV, 2014b).

Skills framework for Victorian public libraries (SLV, 2014)

The vision for public libraries was discussed in the document *Victorian Public Libraries 2030: Strategic framework* (also referred to as *VPL 2030*), with the expectation that staff would be actively engaged with the evolving social trends of creativity, collaboration, brain health, dynamic learning and community connection (SLV, 2013, p.17). Two key scenarios were presented for the future: the 'Creative Library' and the 'Community Library'. In the Creative Library, staff would become "active facilitators of creative development, expression and collaboration" (SLV, 2013, p.21), while in the Community Library staff would be responsible for understanding and developing the capacity of the community, for example by connecting people who have similar interests or complementary skills. In both scenarios, the rapidly evolving technological environment would be a major influencing factor.

To meet the challenges of this changing world, one of the five strategic objectives for *VPL 2030* focused on library staff, with the goal "to develop a flexible and inclusive culture that attracts people with the right skills and attitude to deliver public library services into the future" (SLV, 2013, p.9). To achieve this objective, however, it was acknowledged that more needed to be known about the

"right skills and attitude" which were required to underpin the achievement of the strategic vision. A state-wide research study was commissioned to develop a competency framework that would encompass the range of knowledge and skills that staff would need to deliver the services and programs envisaged for both the Creative Library and the Community Library. The framework underpinned a state-wide skills audit of public library staff designed to gather relevant workforce data. The data enabled library leaders to map the current application of staff skills and to measure their confidence levels, as well as to identify the skills that were likely to be required in five years' time. The skills gap analysis led to a multi-year program of staff training and development activities (SLV, 2014b). To monitor and evaluate the progress made with the skills development, a second workforce audit was conducted in 2019 which "measured the changing importance of specific skillsets and tracked improvement or decline in staff confidence levels" (SLV, 2020).

The development of the *Skills framework for Victorian public libraries* (SLV, 2014b, Appendix 3) was informed by an extensive literature review and environmental scan which examined the existing competency frameworks relevant to the contemporary and future LIS workforce (SLV, 2014b, Appendix 2). A program of stakeholder consultation was conducted, with interviewees drawn from metropolitan, regional and rural library services, local government, the LIS education sector and professional associations.

After the draft skills framework was developed, it was examined and discussed by library staff who participated in a series of 15 focus groups. The comprehensiveness of the framework was an important element of the research activities: it was structured into three areas of workplace skills: 10 Foundation skills, 30 Professional skills and 19 Behavioural skills (Table 7). There was no expectation that individual staff working in public libraries would require the full range of 59 competencies, but that the framework itself represented a holistic model for the spectrum of knowledge, skills and attributes required by different personnel working in diverse functions in the future-focused Community Library and Creative Library scenarios.

Table 7: Skills framework for Victorian public libraries (SLV, 2014b)

1.0 Foundation skills and general knowledge		
Foundation or general skills obtained on the basis of citizenship (Mounier, 2001), 21st century skills which are required by all citizens and which underpin the needs of the communities served by libraries (IMLS, 2009); information and media literacy (UNESCO, 2013a)		
	Competency	**General scope of competency**
1.1	Literacy	The ability to read and write, and to use written information in a range of contexts
1.2	Numeracy	The ability to use mathematical knowledge and skills
1.3	Digital literacy	The ability to use information and media skills in a digital world
1.4	Cultural literacy	The ability to appreciate and accept the diverse beliefs, appearances and lifestyles of people from different cultural backgrounds
1.5	Political/civic/citizen literacy	The ability to understand social and political issues relating to democracy and social justice
1.6	Financial/economic/business/ entrepreneurial literacy	The ability to understand the role of the economy and make appropriate financial decisions

	Competency	General scope of competency
1.7	Health literacy	The ability to understand how personal and community choices impact on health and wellbeing; to locate and interpret information on health issues
1.8	Environmental literacy	The ability to understand how personal and community choices impact on the environment; to locate and interpret information on environmental issues
1.9	Local awareness	The ability to understand the geographic, social and cultural characteristics of the local community.
1.10	Global awareness	The ability to understand global issues

2.0 Professional skills

Recognised professional skills (Mounier, 2001); LIS discipline knowledge and skills (ALIA, 2014)

	Competency	General scope of competency
2.1	Information and libraries in society	The ability to understand and value the role of information and libraries in society
2.2	Information and communications technology (ICT)	The ability to use ICT in library operations
2.2.1	ICT policy and planning	The ability to contribute to the library's ICT policy and planning processes
2.2.2	ICT systems	The ability to develop and manage ICT systems in the library
2.2.3	Social media and mobile applications	The ability to integrate social media and mobile applications into library operations
2.3	ICT support	The ability to troubleshoot ICT problems in the library
2.4	Information management	The ability to understand how information is managed in libraries
2.5	Information organisation and access	The ability to organise information resources so that they are easily found and accessed by customers
2.5.1	Bibliographic records	The ability to create and maintain bibliographic records
2.5.2	Metadata	The ability to create and maintain metadata schema
2.5.3	Lending services	The ability to undertake routine lending services
2.6	Information seeking	The ability to help customers find relevant information
2.7	Collection management	The ability to ensure that the library collection is current, useful and in good condition
2.7.1	Collection development	The ability to develop and manage the library collection to meet customer needs
2.7.2	Acquisitions	The ability to order, receive and track library resources
2.7.3	Manage digital resources	The ability to manage digital resources in the library collection
2.7.4	Collection maintenance	The ability to keep the collection in good condition
2.8	Information services	The ability to provide information services to diverse customer groups
2.9	Literacies and learning	The ability to run learning programs for diverse customer groups

	Competency	General scope of competency
2.10	Cultural programming	The ability to run cultural programs for diverse customer groups
2.11	Creative making	The ability to run makerspaces in the library
2.12	Community development	The ability to ensure that the library contributes to the development of a strong community
2.12.1	Community needs analysis	The ability to understand local community needs
2.12.2	Community engagement	The ability to support community engagement
2.12.3	Community relationships	The ability to build community relationships
2.13	Management and administration	The ability to manage an efficient library service
2.13.1	Library policy and planning	The ability to contribute to the library's policy and planning processes
2.13.2	Library operations	The ability to manage library operations
2.13.3	Performance monitoring and evaluation	The ability to monitor and evaluate library performance
2.13.4	Library finances	The ability to manage library finances
2.13.5	Library staffing	The ability to manage library staffing
2.14	Marketing	The ability to market the library and promote its services
2.14.1	Marketing the library	The ability to market the library
2.14.2	Promoting library collections, services and programs	The ability to promote the library collections, services and programs
2.15	Project management	The ability to manage a successful project
2.16	Generation of knowledge	The ability to undertake and disseminate research activities

3.0 Behavioural skills

Personal skills associated with the ability to deal with interpersonal relationships and to perform in the context of authority at work (Mounier, 2010; 21st century skills (IMLS, 2009)

	Competency	General scope of competency
3.1	Ethics and values	The ability to act professionally and maintain ethical standards
3.2	Oral communication	The ability to present and discuss information with colleagues and customers
3.3	Written communication	The ability to prepare written documents for a range of audiences
3.4	Non-verbal communication	The ability to use and interpret non-verbal cues
3.5	Customer engagement	The ability to provide high standards of customer service
3.6	Empathy	The ability to show understanding and sensitivity towards other people
3.7	Teamwork	The ability to work productively with others in a group
3.8	Leadership	The ability to exercise strong leadership

	Competency	General scope of competency
3.9	Self-management	The ability to act responsibly and to achieve personal goals
3.10	Flexibility	The ability to respond positively to change
3.11	Creative thinking	The ability to apply creative and innovative thinking
3.12	Critical thinking	The ability to think clearly and rationally about a problem
3.13	Problem solving	The ability to us creative strategies to resolve a problem
3.14	Political and business acumen	The ability to understand the political and business environment in which the library operates
3.15	Building partnerships and alliances	The ability to identify and develop partnerships to gain support for the library
3.16	Critical reflective practice	The ability to develop a greater level of self-awareness about your attitudes and your performance
3.17	Lifelong learning	The ability to learn how to learn in all facets of life (personal, educational and professional)
3.18	Mentoring and coaching	The ability to use your knowledge and experience to help others
3.19	Professional engagement	The ability to develop strong links with the library and information profession

Each skillset in the framework included the knowledge and skill descriptors which typically represented the area of practice. The examples of Digital literacy, Information and libraries in society, and Creative thinking are shown in Table 8.

Table 8: Examples of competency areas with knowledge and skill descriptors (SLV, 2014b)

Competency area	Knowledge and skill descriptors
Digital literacy The ability to use information and media skills in a digital world	Understand and demonstrate the ability to utilise information and media literacy skills in a dynamic digital world, including: • Critically evaluate dynamic content • Use diverse format types and delivery modes • Produce original content in multiple media formats • Share information in participatory environments • Embrace new technologies • Respect privacy, information ethics, cyber safety and intellectual property issues

Competency area	Knowledge and skill descriptors
Information and libraries in society The ability to understand and value the role of information and libraries in society	Understand and value: • The broad context of the information environment • The role of information and libraries in social, cultural and economic development • The mission and philosophy of the public library service • The ethical, legal and policy issues relevant to the access and use of information, particularly the principles of free and equitable access to information • Opportunities to advocate for libraries and information services • The importance of keeping up to date with industry developments • The imperative to discuss the future directions of, and negotiate alliances for, library sector development
Creative thinking The ability to apply creative and innovative thinking	Understand and demonstrate the ability to: • Be curious • Use lateral thinking, creativity and innovation • Apply initiative and enterprise • Adapt skills to new contexts • Experiment and try things out • Focus on continuous improvement of the organisation • Seek and promote new and evolving ideas, methods, designs and technologies • Propose new approaches, solutions and procedures • Take calculated risks • Maximise the effectiveness of own performance in the job within the context of public library philosophy, roles and funding

As part of the research study, the data were examined through three lenses: the skills required for the technology environment, for the Community Library scenario and for the Creative Library scenario. It was found that the specific skills profiles for these priority areas of practice drew on a blend of skills from all three domains of Foundation skills, Professional skills and Behavioural skills.

The most critical skillsets for the technology environment were identified as:

• Digital literacy
• ICT policy and planning
• Development and management of ICT systems in the library
• Integration of social media and mobile applications into library operations
• Provision of ICT support to customers
• Management of digital resources
• Creation and maintenance of metadata schema
• Flexibility
• Creative thinking
• Critical thinking
• Problem solving
• Commitment to lifelong learning.

In the Community Library scenario, the public library has the potential to become a community learning centre; a repository, documenter and disseminator of local knowledge; and a local business hub (SLV, 2013, p.25). The framework of skills of greatest value to this vision included:

- Local awareness
- Political/civic/citizen literacy
- Financial/economic/business/entrepreneurial literacy
- Health literacy
- Environmental literacy
- Community needs analysis
- Community engagement
- Community relationships
- Building partnerships and alliances
- Political acumen.

Staff of the Creative Library were described as "facilitators of creative development, expression and collaboration" (SLV, 2013, p.21). They would principally need a range of skills and abilities that encompassed:

- Digital literacy
- Cultural literacy
- Cultural programming
- Creative making
- Literacies and learning
- Creative thinking
- Problem solving
- Customer engagement
- Building partnerships and alliances
- Lifelong learning.

The role of public libraries in the context of digital culture and creativity was examined by Wyatt, McQuire and Butt (2015). The authors acknowledged that library participation has been driven by a range of 'non-traditional' services and activities underpinned by technological developments. The investment in creative literacy programs and facilities such as coding workshops, media labs, design training and recording equipment "requires a combination of social, technical and pedagogical skills" (Wyatt et al., 2015, p.7). While the report did not present a specific framework of the skills required, it was recognised that there was value in employing "a new type of staff member" with specialist skills from other disciplines (Wyatt et al., 2015, p.10).

This idea of bringing specialist skills into the public library workforce resonates with the information provided by the Australian Public Library Alliance (APLA) and ALIA in the *Standards and guidelines for Australian public libraries* (2021): "Other professional and specialist staff may be employed to work in positions that suit the demographics and needs of the community" (APLA & ALIA, 2021, p.17). It is noted that larger libraries may need to employ more specialist staff because of the more varied range of programs and services they offer to a potentially more diverse community.

The principles that underpin the *IFLA/UNESCO public library manifesto* (IFLA/UNESCO, 1994) state that public libraries should be staffed by professional librarians (CILIP, n.d.-a), with the professional and continuing education of the librarian an indispensable factor to ensure quality service provision in a rapidly changing social and technological environment. To emphasise the ever-evolving roles of public library staff, CILIP and the Society of Chief Librarians (now Libraries Connected) drafted a vision which drew on the words of the Danish information professional, Ralf Hapel: "The library was never finished. It was never meant to be finished" (CILIP & SCL, 2017, p.2). Accordingly, the vision places "information and library skills and values at the heart of public service delivery" with a commitment to ensure that "the expertise of the profession is recognised and valued" (CILIP & SCL, 2017, p.2).

Public library skills strategy 2017-2030 (CILIP & SCL, 2017)

The commitment to skills development is articulated through the *Public library skills strategy 2017-2030* (CILIP & SCL, 2017). It states that "expert information skills and the ability to engage communities" represent the cornerstone for success. The skills strategy represented one element of the *Action Plan* (Libraries Taskforce, 2016) which was released with the report *Libraries deliver: Ambition for public libraries in England 2016-2021* (DCMS, 2016). It was prepared as a key document to "guide and support the learning and development needs of the public library workforce" so that public libraries were recognised "digital, creative and cultural centres of excellence" in the community (CILIP & SCL, 2017, p.3).

The skills strategy outlines nine aims for the development of the public library workforce in England (CILIP & SCL, 2017, p.5):

- Attracting, retaining and developing talent
- Targeting inclusion, diversity, representation and equality
- Investing in professional skills and ethics
- Promoting leadership at every level
- An open, inclusive approach to professionalism
- Lowering the barriers to entry
- Commitment to continuing professional development
- Valuing transferable skills
- Looking beyond the sector.

The beliefs and ideas that underpin these nine aims resonate with the goals of ALIA's *Professional Pathways* initiative, for example by striving to ensure that the public library workforce reflects and represents the diversity of the communities served; and by continuing to recognise LIS qualifications while also accepting that specialist expertise and skills drawn from other disciplines add value to the sector. The strategy identifies that the goal of designing multiple pathways into the profession by offering academic and non-academic routes should be backed up by the commitment to career-long learning through CPD. There is also support and encouragement for people who choose to move in and out of the public library sector, with the realisation that their mix of skills and professional experience will be invaluable (CILIP &SCL, 2017, p.5).

The skills strategy seeks to enhance the public library sector "by recognising, investing in and utilising the expert skills of library information and knowledge staff' (CILIP & SCL, 2017, p.6), with the focus on helping individuals develop their skills and plan their careers and encouraging key stakeholders to plan appropriate education, training and career development opportunities. The framework outlined in the skills strategy considers four principal agents:

- Local staff
  - To provide an inclusive and expert service to local library users
- Specialists
  - To use their qualifications and experience to provide skilled advice, competence and services at both the local and national levels
- Managers
  - To expertly manage the resources to support local services, to develop partnerships and to evaluate performance
- Leaders
  - To set direction, set values and ethical principles, to work with stakeholders and policymakers, to inspire the workforce, to secure funding and to lead change.

The skills and behaviours associated with each of these roles are outlined in Table 9.

Table 9: Public library skills framework – skills and behaviours (CILIP & SCL, 2017, p.8)

Role	Skills
Local staff	- Welcoming, proactive, literate, creative, resilient and adaptable team players - Local leaders - Advocacy - Up-skilling, IT & digital literacy - Facilitation, communication and writing
Specialists	- Current knowledge, knowledge management - Communication, creativity - Commercial knowledge, project managers - Transferable skills in information, records and knowledge management
Managers	- Problem-solving, project management, commercial contractors - Change managers, resourceful, - People managers, credible and resilient leaders - Communicators
Leaders	- Visible - Negotiator, compelling communicator, persuasive - Creative, adaptable - Commercial - Advocate and strategist - Understand legal context and framework

The document concludes with a series of recommendations aligned with the nine strategic aims, including (CILIP & SCL, 2017, p.9-10):

- A national advocacy campaign celebrating the workforce
- An employer engagement plan
- A diversity and equity plan for the sector
- Revisiting the role of professional ethics in public libraries
- A public libraries leadership program

- A new, more open and inclusive approach to 'professionalism'
- Review of existing pathways into the profession
- Commitment to continuing professional development
- Valuing transferable skills
- Celebrating and profiling diverse career paths.

The proposed way forward is mapped to short term (1 year), medium term (2-4 years) and long term (5+ years) actions.

A project was recently launched to produce a new *Workforce and Skills Strategy* with the goal to develop a framework which identifies the significant skills required by the public library workforce (Libraries Connected, 2021). It is anticipated that the new skills framework will include:

- The core skills sets required by the work force
- The areas of specialist knowledge that library staff would need, for example to support specific communities or customer groups
- The skills, ideas, behaviours, and competencies needed to support digital development.

The project proposal document states that the work should be informed by CILIP's PKSB and ethical framework.

North America

While the competency index published by WebJunction has a broad focus, three frameworks of knowledge and skills for public librarians have been developed by regional associations in the Canada and the US, including Ontario, British Columbia and Ohio.

Competency index for the library field (WebJunction, 2014)

A comprehensive approach to the knowledge and skills required in "a vibrant and relevant library" is presented in the *Competency index for the library field (CILF)* (Gutsche & Hough, 2014, p.3). This competency index was compiled by WebJunction, a program of OCLC Research, which focuses on the development of the knowledge, skills and confidence of public library staff through online training programs and webinars (WebJunction, 2021). The *CILF* emphasises the significance of core technology competencies as "every position [in the library] requires some level of comfort with computers" (Gutsche & Hough, 2014, p.3):

- Core technology competencies
  - Core email
  - Core hardware (including mobile devices)
  - Core Internet
  - Core operating systems
  - Core software applications
  - Core web technologies.

Strong interpersonal skills are also regarded as being fundamental for everyone working in a library, regardless of their position. Reference is made to the 21st century skills (IMLS, 2009) to underscore the importance of communication, collaboration, critical thinking and creativity (Gutsche & Hough, 2014, p.1).

- Personal/interpersonal competencies
  - Collaboration
  - Communication
  - Customer service
  - Ethics and values
  - Leadership
  - Learning and innovation.

Beyond these core competencies, attention is given to the different functional areas of professional practice, for example:

- Library collections
  - Acquisition and processing
  - Cataloging
  - Collection development and management
  - Digital resources technology
  - E-Resource management
  - Preservation

- Public services
  - Adult and older adult services
  - Young adult services
  - Children's services
  - Patron training
  - Public access technology
  - Circulation services

- Library management
  - Community relations
  - Facilities
  - Financial management
  - Laws, policies and procedures
  - Marketing and public relations
  - Organizational leadership
  - Personnel management
  - Project management
  - Staff training and development
  - Strategic planning
  - Trustees, friends and foundations.

Each competency area comprises a number of discrete skill sets, as evident in listing of three skill sets for Collaboration (Gutsche & Hough, 2014, p.7-8):

- Collaboration
  - Develops and maintains effective relationships to achieve common goals
  - Works effectively in teams with strong team-building skills and attitudes
  - Applies effective strategies to manage organizational politics, conflict and difficult coworker behavior.

Each of these skill sets is further distilled into a group of relevant skills and behaviours:

- Applies effective strategies to manage organizational politics, conflict and difficult coworker behavior
  - Understands that organizations are inherently political (including libraries) and develops strategies to become an effective player
  - Understands a variety of difficult behavior patterns and develops responses to each
  - Routinely examines own behavior, accepts accountability for own actions and adjusts appropriately
  - Understands and applies strategies for conflict resolution.

Beyond the core technology competencies outlined above, detailed attention is also paid to the specific skills required for planning and managing technology systems. It is noted that as technology was ubiquitous in libraries, it was likely that there the associated responsibilities would lie with dedicated IT staff, or even IT consultants. In smaller libraries, however, there may be "accidental" systems librarians (Gutsche & Hough, 2014, p.60).

- Technology competencies: systems and IT
  - All IT
  - Automation systems
  - Enterprise computing
  - Hardware
  - Networking and security
  - Operating systems
  - Public access technology systems
  - Server administration
  - Software applications
  - Technology planning
  - Web design and development.

Although the *CILF* does not explicitly state that the competencies pertain to public libraries, the compilation of skillsets drew on a variety of competency lists, primarily for public library staff. Additionally, the large number of subject matter expert reviewers were mainly employed in the public library sector. Since the publication of the *CLIF,* several public library services in North America invested in the development of their own competency frameworks:

- Ontario Library Service (2015)
- British Columbia (BC) Libraries Co-operative (2017)
- Ohio Library Council (2019).

Ontario Library Service: Competencies index for public library staff (2015)

The *Competencies index for public library staff* published by the Ontario Library Service (2015) represents an adaptation of the WebJunction resource (Gutsche & Hough, 2014). The framework is divided into five categories:

- Personal/interpersonal
- Management/leadership
- Public service
- Collection management
- Technology.

Each category comprises a number of skill sets. Compared to the six skill sets outlined in the *CILF* (Gutsche & Hough, 2014), the Ontario framework presents nine:

- Customer service
- Access services
- Adult services
- Programming and outreach
- Reader's advisory
- Reference
- Patron training
- Children's services
- Young adult services.

The concept of 'core competencies' is described as the "knowledge, skills and abilities that should be held by all staff across the organization" (Ontario Library Service, 2015). Within the Technology category, there is a group of 'technology core competencies', and all competencies in the Personal/interpersonal category are considered 'core': they are universally required by anyone who works in a library:

- Communication
- Ethics & values
- Collaborative relationships
- Learning & personal growth.

Each competency is broken down into a number of sub-competencies which in turn encompass a more detailed list of associated knowledge, skills and abilities. The framework reflects the key principles of the *CILF* (Gutsche & Hough, 2014), but offers further amplification. For example, the core competency of Collaborative relationships has five sub-competencies, compared to three in the *CILF* (outlined above):

- Develops and maintains healthy relationships with others to achieve common goals
- Works collaboratively in teams or groups
- Demonstrates an aptitude for collective problem solving
- Practices informal leadership
- Employs strategies to manage organizational politics, conflict and difficult co-worker behaviours.

The central ideas of the *CILF* (Gutsche & Hough, 2014) are reiterated in the associated knowledge, skills and abilities for the final sub-competency, organizational politics:

- Understands that organizations (including libraries) are inherently political and develops strategies to become an effective player
- Understands a variety of difficult behaviour patterns and develops responses appropriate to each
- Routinely examines own behaviour, accepts accountability for own actions and adjusts appropriately
- Practises patience and tact in defusing volatile situations and striving for agreement as necessary
- Understands and applies strategies for conflict resolution.

Beyond the index of workplace competencies, the web resource provides a number of competency profiles where a range of 'typical' competencies is associated with a particular type of role or position in the public library, ranging from a courier driver to a Chief Executive Officer. Individuals are encouraged to proactively use the competency index as a practical tool to identify their learning priorities, select the specific competencies to develop, design the preferred learning opportunities (both formal and informal) and map the ideas to a learning plan.

British Columbia (BC) Libraries Co-operative: Staff competencies hub (2017)

The British Columbia (BC) Libraries Co-operative established a *Staff Competencies Hub* in 2017 with the goal of providing "an information hub for information professionals in need of improving their skills, education and professional needs in information and library science fields" (BC Libraries, 2017). The main concept of the project focused on an online training matrix, supported by a competency index which directly replicated the WebJunction *Competency index for the library field (CILF)* (Gutsche & Hough, 2014).

The organisation of the content of the training matrix therefore followed the model of the *CILF* structure of Category > Competency > Skills, as shown in the example for Collaboration:

- Core personal/interpersonal competencies
  - Collaboration
    - Applies effective strategies to manage organizational politics, conflicts and difficult coworkers behaviours
      - Understands that organizations are inherently political (including libraries) and develops strategies to become and effective player.

When introduced, the training matrix was designed to be a "self-driven database of professional skillset areas" (BC Libraries, 2017), with links from the individual skillsets to relevant resources coordinated by the BC Libraries Staff Online Training Program, offering staff the opportunity for up-skilling. However, as the hub is no longer updated, the Resources page simply presents a listing of general online training platforms, such as EdX, Coursera and Khan Academy. On the Updates page, users are directed to the Education Institute developed by the Partnerships of Provincial and Territorial Library Associations of Canada (The Partnership, 2021).

The Education Institute is described as "a professional development & continuing education program for the library community" (The Partnership, 2021) which was established by the Ontario Library Association in 2003. It offers a varied selection of webinars and longer online courses: individual library and information professionals can register for single events or library institutions can purchase an All Access Pass for group professional development opportunities. Participants can earn credits towards the achievement of the Continuing Education Certificate (CEC) program, which is a formal program for library staff to plan, document and report their professional development and learning activities (The Partnership, 2020).

Ohio Library Council: Ohio public library core competencies (2019)

In 2019, the Ohio Library Council reviewed and updated the organisation's core competencies to ensure that they reflected the changing trends in library science. The *Ohio public library core competencies* have value for both the organisation and the individual library staff as "tools to help your library with job descriptions, training plans and employee evaluations AND guide to improving your skills, enhancing knowledge and furthering your library career" (Ohio Library Council, 2019a).

A set of 16 Foundational competencies is presented as being requisite for all library staff, listed in alphabetical order:

- Adaptability
- Advocacy
- Communication
- Customer service
- Emergency preparedness
- Equity, diversity and inclusion
- Essential technology skills
- Ethics
- Intellectual freedom
- Laws
- Organisational awareness
- Patron awareness
- Personal organization
- Problem solving
- Safety and security
- Teamwork.

Brief definitions are provided for each competency, for example:

- Adaptability
  - The ability to adapt to changing situations
- Advocacy
  - The ability to promote and support the fundamental purpose of the public library
- Communication
  - The ability, through both verbal and written methods, to provide concise, timely, and accurate information, internally and externally, among all organizational levels and with all appropriate people.

The skills required in the diverse areas of professional practice are presented as 'competencies by track', whereby the tracks "represent the varied roles of library staff" (Ohio Library Council, 2019b) Library staff may potentially find that their job duties span more than one track. There are 16 competency tracks, some of which align with specific job roles (e.g. Director), some relate to management and operational functions (e.g. Human resources), while others relate to service delivery (e.g. Outreach services):

- Adult services
- Children's services
- Circulation services
- Digital media services
- Director
- Facilities and maintenance
- Fiscal officer
- Genealogy and local history
- Human resources
- Information technology
- Management and administrative
- Marketing and public relations
- Outreach services
- Safely and security
- Technical services
- Teen services.

Each track is presented as a listing of competencies which reflect a blend of the foundational competencies and a selection of relevant skills. For example, the competency track 'Adult services' encompasses 23 competencies, of which 16 are the foundational competencies which are necessary for all staff (listed above) and seven relate to the delivery of 'Adult services' to customers:

- Collection management
- Community engagement
- Innovation
- Patron instruction
- Programming
- Reader's advisory
- Reference.

It is noteworthy that the Ohio public library core competencies are not as detailed as those presented in the WebJunction and Ontario frameworks. There is a brief definition for each competency, but there is no further breakdown into typical areas of knowledge and skills. One benefit of this approach is that it has been possible to develop a summary document which depicts the matrix of the different tracks and their component competencies (Ohio Library Council, 2019c), as shown in Figure 2.

Competency	Definition	Foundational	Adult Services	Children's Services	Circulation Services	Collection Development	Digital and Media Services	Director	Facilities and Maintenance
Acquisition	The ability to effectively process library material orders; knowledge of vendor software, processes, products, and updates.					X			
Adaptability	The ability to adjust to changing situations.	X	X	X	X	X	X	X	X
Advocacy	The ability to promote and support the fundamental purpose of the public library.	X	X	X	X	X	X	X	X
Building Management	The knowledge and management of the library's building, grounds, and equipment.							X	X
Cataloging and Metadata	The preparation of accurate descriptions of library materials and the provision of appropriate access.								
Collection Management	The ability to select and evaluate materials and to maintain a collection designed to meet the needs of the intended audience, including conservation and preservation.		X	X		X	X		
Communication	The ability, through both verbal and written methods, to provide concise, timely, and accurate information, internally and externally, among all organizational levels and with all appropriate people.	X	X	X	X	X	X	X	X

Figure 2: Excerpt from the matrix of competencies and tracks (Ohio Library Service, 2019c)

The framework reveals that varied groups of skills are relevant to different areas of public library practice, but the Foundational skills, or soft skills, are common to all roles, e.g. communication, adaptability and advocacy.

Public librarians' perspectives of core competencies

A number of studies have been published where the lens shifts from that of the developers of competency frameworks for public library staff to that of professional practitioners. Two examples are reviewed: one from Australia and one from the US.

Australia

In Australia, the two skills audits of Victorian public library staff (SLV, 2014b; SLV, 2020) were structured around the *Skills framework for Victorian public libraries* (SLV, 2014b, Appendix 3). As discussed earlier (ref), this skills framework included three categories of skills: Foundation skills, Professional skills and Behavioural skills. The Individual skills survey attracted over 1,300 respondents in both studies (i.e. a response rate of 48% in 2019, 45% in 2013), while there were over 30 responses to both the Management surveys (SLV, 2014b; SLV, 2020).

The analysis of the data collected in the Individual skills audit allowed the researchers to identify the most important skills for the respondents' professional practice, as well as their levels of confidence using the various skills. The Management survey results highlighted the most important skills for the public library service as a whole. The findings from the 2019 skills audit are presented in Table 10.

Table 10: Most important skills: Individual survey and Management survey (SLV, 2020)

Individual survey	Management survey
Foundation skills	
Literacy	Literacy
Cultural literacy	Cultural literacy
Digital literacy	Digital literacy
Local awareness	Local awareness
	Political literacy
Professional skills	
Libraries in society	Community needs analysis
Information seeking	Libraries in society
Information services	Lending services
Library promotion	Community engagement
Lending services	Community relationships
	Collection development
	Acquisitions

Individual survey	Management survey
Behavioural skills	
Customer engagement	Customer engagement
Ethics and values	Ethics and values
Teamwork	Empathy
Empathy	Flexibility
Oral communication	Leadership
Flexibility	Teamwork
Self-management	

The current strengths of public library staff, as viewed through the lens of high levels of confidence, were mapped to a range of Foundation, Professional and Behavioural skills (SLV, 2020, p.34):

- Foundation skills
  - Literacy
  - Cultural literacy
- Professional skills
  - Libraries in society
  - Information services
  - Information seeking
  - Collection maintenance
  - Lending services
- Behavioural skills
  - Flexibility
  - Customer engagement
  - Teamwork
  - Empathy
  - Ethics and values
  - Critical thinking
  - Self-management
  - Oral communication
  - Mentoring and coaching.

Staff members have a strong understanding of the role public libraries play in the community and they are well experienced in the 'traditional' services provided by libraries. Their ongoing strengths lie in working with the users (customer engagement, empathy, ethics and values) and in contributing to a strong workplace culture (teamwork, self-management, flexibility and oral communication). The research report also presented an overview of the priority skills for the future, based on the inevitable importance of the technology environment and on the skills required for both the Creative Library scenario and for the Community Library (SLV, 2020). The Individual survey data and the Management survey data allowed a number of skills gaps to be identified, which could in turn be addressed through a state-wide program of training and development.

Looking to the future, public library staff would need to continue to develop their digital literacy skills, along with the ability to face fresh challenges and adopt new ideas, for example through flexibility, creative thinking, problem solving and lifelong learning. There was a sense that there was less dependency on hard technology skills within the library as a result of proprietary IT systems that

used to be managed in-house being replaced by more networked or cloud-based services. The important skills were therefore the "core technology competencies" (Gutsche & Hough, 2014) relating to social media and mobile applications, and ICT troubleshooting and support. Specialised staff would be responsible for any more complex technical areas (SLV, 2020, p.36), with responsibilities for solution design and enterprise architecture, integrating multiple cloud systems from different vendors with each other and with other corporate systems, with single sign on functionality, transition planning, testing and change management, and user experience (UX) (S. Searle, personal communication, January 15, 2022).

In terms of achieving the strategic vision presented in the *VPL 2030* document (SLV, 2013), the research data revealed that there were some critical skills gaps in the Creative Library scenario, especially for literacies and learning, cultural programming, creative making, and building relationships and alliances (SLV, 2020, p.39). For the Community Library scenario, staff would need to gain a more mature understanding of the 21st century literacies (health literacy, environmental literacy, financial literacy and political literacy) to be able to understand and interpret community issues (SLV, 2020, p.42). They would also benefit from training and development in the areas of community needs analysis, community engagement and community relationships, along with building relationships and partnerships. In many cases, there was a need to translate the existing theoretical understanding into practice, for example with staff gaining hands-on experience by participating in community needs analysis activities or supporting community connection through collaborations with staff in other agencies.

United States

In the US, Williams and Saunders (2020) drew upon the knowledge, skills and abilities (KSAs) presented in the ALA *Core competencies* statement (2009) to identify what LIS professionals regarded as 'core' in their own field of practice. The researchers sought to examine the extent to which these KSAs aligned with trends in the field, such as societal developments, rapidly changing technologies and evolving user expectations (Williams & Saunders, 2020). A survey was open to LIS professionals working in public, academic, school, special and corporate libraries, and employed in positions across the LIS sector more broadly, e.g. database vendors or technology companies. A total of 2,490 responses were received; the data submitted by different employment groups were analysed collectively and separately. The public library sector represented the focus of this specific analysis: 29% of all responses were submitted by people working in the public library sector (n=708).

The authors reviewed the ALA's competency statement (ALA, 2009) and a number of research studies to compile an aggregated list of 53 KSAs. These KSAs were clustered in five groups: general, communication, user services, management and technology. Respondents were asked to consider the significance of the various KSAs to their professional practice: they were asked to rate each KSA on a 5-point Likert scale of importance (Williams & Saunders, 2020, p.286):

- Core: all MLIS graduates should have a strong foundation, regardless of career path
- Very important: most professionals will need to know/be able to do this
- Important: many professionals will be familiar with this skill/content
- Specialized: only professionals in specialized positions are likely to need this skill/knowledge
- Not important.

There was also an open-ended question inviting respondents to add any skills they felt had been omitted from the list.

The findings revealed that 11 skillsets were considered 'core' by over 50% of public library respondents (Table 11).

Table 11: Core KSAs for public librarians (Williams & Saunders, 2020)

Knowledge, skills & abilities	Percentage of respondents
Interpersonal communication	89%
Knowledge of professional ethics	85%
Customer service skills	84%
Search skills	79%
Writing	79%
Teamwork	78%
Evaluating and selecting information resources	77%
Cultural competence	67%
Interacting with diverse communities	66%
Reference interview/question negotiation	61%
Reflective practice grounded in diversity and inclusion	53%

Four of these 'core' KSAs were identified as domain-specific or professional skillsets: knowledge of professional ethics, search skills, evaluating and selecting information resources, and the reference interview/question negotiation. The remaining seven can be regarded as behavioural skills or generic capabilities, which are not specifically aligned with the LIS profession.

In terms of the most highly ranked 'core' skills, there was a very strong degree of overlap across the groups of respondents in different information settings (public libraries, academic libraries and school libraries). The value of customer service skills, however, was greater for the cohort of public library respondents (84%), than for school librarians (74%) or academic library staff (66%) (Williams & Saunders, 2020, p. 288). The KSAs associated with the reference interview were the only ones which were ranked as 'core' by public library staff (61%), but not by academic or school librarians.

Qualitative data collected in the survey stressed the growing responsibilities to serve some of the more vulnerable members of the community, for example people experiencing homelessness, domestic violence, or immigration challenges, or people living with a mental health illness or substance use disorder. While some libraries have employed qualified social workers, there is an increasing need for public library staff to provide community and social support. Interpersonal and emotional skills were therefore very important.

It was noted that no technology skills were included in the list of 'core' skills. The researchers believed that librarians understood the overall importance of technology in library work and know that there is an ongoing need to keep up with the changes as they happen (Williams & Saunders, 2020, p.291f.). Similarly, there was a general sense that the KSAs associated with educational programming, especially digital literacy, health literacy and fake news, represented a growing area

of activity, but it was likely that only a dedicated group of staff was involved. In the open-ended comments, respondents highlighted the skills relating to immediate political context in which public libraries operated, where they, as publicly funded institutions "must work within the infrastructure and regulatory systems of state and local politics" (Willams & Saunders, 2020, p.293), and therefore be political savvy and have at least a basic knowledge of the political system.

The researchers reported that while a range of KSAs were required by public library staff, their personal, interpersonal and communication skills were the most valued, due to the community-facing roles that they played. It was critical that public library staff were prepared "to engage across communities and with high levels of empathy and service" (Williams & Saunders, 2020, p.294).

Skills for 21st century librarians: Learning objectives for library programming (ALA, 2021)

The American Library Association (ALA) Public Programs Office has built on work undertaken in the *National Impact of Library Public Programs Assessment* (NILPPA) project (Sheppard et al., 2019). A library program was defined as "an intentional service or event in a group setting developed proactively to meet the needs or interests of an anticipated target audience" (NILPPA, 2019, p.7). While library programming may be generally associated with public libraries, NILPPA states that "all libraries, regardless of type, have a public – the audiences the library tailors its programs to and the people the library serves" (NILPPA, 2019, p.7). The skills required for public program activities are therefore also required by staff in academic and college libraries, school libraries and special libraries.

In the NILPPA project, nine core competency areas were identified for library staff involved in public programming (Table 12).

Table 12: Core competencies for library public programs (NILPPA, 2019)

Competency area	Definition
Organizational skills	Works toward managing time and projects efficiently and effectively at multiple levels: individually, institutionally, and in collaboration with outside organizations and agencies
Knowledge of the community	Works toward understanding the communities for and with whom programs are developed, including their particular needs and interests; building respectful, reciprocal relationships with community members and organizations; and ensuring access to a wide variety of programs for all community members, especially those who have historically been underserved or face other challenges to access
Interpersonal skills	Works toward communicating effectively and appropriately with all stakeholders and audiences to provide consultation, mediation, and guidance during programs and in other contexts relating to programs
Event planning	Works toward planning, managing, and implementing events that are both developmentally and culturally appropriate and accessible for their intended audiences
Creativity	Responds to challenges and opportunities with innovation, flexibility, and creativity to resolve them

Competency area	Definition
Content knowledge	Works toward sufficient knowledge of program content to deliver, manage, or evaluate programs, according to role
Outreach & marketing	Works toward communicating information about programs to all community members who could potentially attend or benefit, using a variety of digital and analog channels in ways that are culturally and developmentally appropriate
Financial skills	Works toward budgeting, seeking funding for, and managing the finances of a program or suite of programs, often in collaboration with external partners
Evaluation	Works toward using statistical and qualitative tools to measure program effectiveness and impact on all community audiences, including those that have historically been un- and underserved; and using this information to iteratively improve the development and delivery of programs

In 2021, the ALA released a draft document outlining the proposed learning objectives for library programming with the goal of informing the design and development of the curriculum of library degree courses and professional development training sessions (Norlander & Barchas-Lichtenstein, 2021). It was argued that, while the nine competency areas remained relevant, it was important to incorporate digital competencies and considerations for equality, diversity and inclusion (EDI) (ALA, 2021b). A number of desired learning outcomes were listed for each competency area, with a selection of links to further resources also provided. Following review and consultation, the document will be updated for use in proposing public programming as a core aspect of librarianship in ALA-accredited MLIS courses, as well as the creation of additional training pathways (e.g. through librarianship institutes and state libraries) and professional development opportunities (Norlander & Barchas-Lichtenstein, 2021). This was especially important for the 'soft' skills as "confidence in one's ability to do programming appears to stem less from subject area expertise (information skillsets) and more from the ability to leverage community resources and facilitate experiences (social skillsets)" (Sheppard et al., 2019, p.11).

The competency frameworks that have identified as being specifically relevant to the public library sector have all adopted a holistic approach to the knowledge and skills required by library staff, both in Australia with the *Skills framework for Victorian public libraries* and in North America with WebJunction's *Core skills for the library field*, *Competencies for Ontario public library staff*, *BC Libraries' Competency index* and *Ohio Library Council's Core competencies*. Arguably, the primary area of distinctiveness for this field of practice relates to the development and delivery of resources, services and programs to the broad spectrum of community members, regardless of age, citizenship, political belief, physical or mental ability, gender identity, heritage, education, income, immigration and asylum-seeking status, marital status, origin, race, language, religion or sexual orientation (IFLA, 2012a).

3.2   Academic and research libraries

Several years ago, a succinct summary of competency lists for the LIS discipline, viewed through the lens of the Australian academic library, was released (RMIT & The University of Melbourne, 2018). The document includes a topical annotated bibliography, ordered by the three types of libraries (i.e. libraries in general, academic libraries, and special libraries and specific discipline areas), as well as by aspects of library work (i.e. analytics, leadership and management, learning and teaching, collections and discovery, and research and publishing). One of significant gaps in the documentation that was identified related to published skills frameworks for LIS professionals employed in TAFE libraries. As it is recognised that there are distinctions between the skills required for practice in the VET sector and those applied by library staff in academic and research libraries, the opportunity exists for further work to be undertaken in this area.

In this section, the relevant skills frameworks are discussed firstly from the perspective of academic librarianship more broadly, followed by the perspective of research and data librarianship as a more specialised field of practice. The focus is more international, with commonalities apparent in the frameworks published in Australia, Canada, the UK and the US: there is evidence that the structure and content of some frameworks have been influenced by others.

3.2.1   Academic librarianship

Principles and guidelines for Australian higher education libraries (CAUL, 2016)

In Australia, at the national level, the Council of Australian University Librarians (CAUL) promotes the *Principles and guidelines for Australian higher education libraries* (CAUL, 2016). As the title infers, this document presents guidance about how university libraries can "contribute towards institutional and national higher education performance outcomes" particularly by highlighting the staff members' "unique professional skills and capabilities" (CAUL, 2016, p.4). While the document is referred to as a 'quality framework' rather than a 'skills framework', one of the central themes is the significance of the evolving professional expertise that has enabled "ubiquitous access to information, collections, learning objects, and research outputs regardless of location… and for transforming the way that students and the academy engage with information" (CAUL, 2016, p.4).

The CAUL principles are aligned with the three strategic priorities for academic libraries:

- Strategic priority 1: Strengthening learning, teaching and research
- Strategic priority 2: Fostering the creation and dissemination of new knowledge
- Strategic priority 3: Growing a dynamic, sustainable and accountable organisation

CAUL indicates that the library contributes to institutional effectiveness and the achievement of the university's mission through the diverse skill sets, knowledge and experience of the staff: "Individuals have the required knowledge, discipline expertise, skills, attributes, qualifications, capabilities, work experience and/or professional development, for the diverse roles they perform to meet the needs of the university" (CAUL, 2016, p.11). Some of the areas that rely on staff capabilities include the transfer of knowledge and skills:

- The provision of educational programs and training to enable stakeholders to build contemporary research, academic and digital literacy skills
- The provision of appropriate scaffolded training and skills development to build stakeholders' inquiry and research skills.

The importance of staying current with emerging trends, tools, technologies and resources through professional development opportunities is also emphasised. While there are no definitions or descriptions of the specific skill sets that are required to deliver high quality research, learning and teaching support, the Melbourne-based organisation, CAVAL, offers some guidance.

CAVAL competencies for academic and research librarians (2017)

CAVAL is a co-operative of ten academic libraries, predominantly in Victoria. One of the committees of CAVAL, the CAVAL Professional Development Interest Group (CPDIG) was responsible for the developing and publishing the document *Competencies for academic and research librarians* (CAVAL, 2017). The framework is an adaptation of a Canadian resource, *Core competencies for 21st century CARL librarians* (CARL, 2010). It should be noted that CARL has recently published an updated version of their competency framework (CARL, 2020) which is reviewed below.

The CAVAL framework has been described as "a holistic compendium of core competencies for librarians working in academic libraries in an intense research environment" (CAVAL, 2017, p.4), with emphasis to be placed on the specific nature of the individual academic/research library. The document presents seven categories of competency:

- Context knowledge
- Personal skills
    - Attributes
    - Competencies
    - Skills
- Leadership and management
- Collections and discovery
- Learning and teaching
- Research and publishing
- Professional engagement.

Each category encompasses a number of knowledge areas, each of which includes more detailed topics of knowledge and understanding. The immediate academic environment is accentuated by the terminology used, as seen in some selected examples in the competency area of Context knowledge, whereby librarians in the sector should have a strong foundational knowledge of:

- Librarianship and professional practice
    - The role of the library in the promotion of intellectual freedom through the development, management and preservation of the scholarly research record
- The library or library service within which they work
    - Key services for students, faculty, scholars and the general public
- The larger institutional organisation
    - The campus environment
- The extra-institutional environment
    - Regional, provincial, national and international organisations which affect library organisation and operation (e.g. QULOC, CAVAL, WAGUL, CAUL)

- The higher education environment at various levels
  - Funding processes
  - Regulation
- Scholarly communication models and practices
  (including institutional repositories, open access journals, data management)
- Legal issues relating to the academic environment.

The categories of Personal skills, Leadership and management and Professional knowledge are all more universal in scope, while the categories of Collections and discovery, and Learning and teaching are aligned with the typical resources and activities undertaken in an academic library. The category of Research and publishing is the one that stands out as including some skill sets that are specifically relevant to the academic and research library. This competency area is discussed in greater detail later in this report.

The authors of the CAVAL competency framework indicate that it can be used to better understand the range of skill sets and capabilities of academic library staff, which in turn can help individuals consider their professional development priorities and facilitate discussions about workforce planning.

Core competencies for 21st century CARL librarians (2010)

As noted above, the CAVAL framework was based on the one developed by the Canadian Association of Research Libraries (CARL): *Core competencies for 21st century CARL librarians* (2010). The core competencies seek to reflect "the unique composition of competencies required by academic librarians working in an intense, 21st century academic research environment (CARL, 2010, p.3). The stimulus for the development of the framework was a major national workforce research project, *The future of human resources in Canadian libraries*, or the *8Rs study* (Ingles et al., 2005). There were concerns in Canada, as in other developed countries, that the library and information sector would be negatively impacted by a significant number of retirements from the profession. The *8Rs study* was a major national project to collect and analyse LIS workforce data, which then represented the baseline for future research. The CARL competency framework was one of the actions arising from recommendations presented in the *8Rs study*.

While the CARL framework was developed for academic libraries in Canada, it was believed that the concepts would resonate with academic library staff in other "technology-advanced countries" (CARL, 2010, p.3). The framework's introductory wording is also used in the CAVAL framework (2017): "a holistic compendium of core competencies for librarians working in academic libraries in an intense research environment" (CARL, 2010, p.6). As in the CAVAL document, there are also seven categories of competency, although some of the terminology differs:

- Foundational knowledge
- Interpersonal skills
- Leadership and management
- Collection development
- Information literacy
- Research and contributions to the profession
- Information technology skills.

The categories of Foundation knowledge (CARL) and Context knowledge (CAVAL) are the most similar areas, but beyond this it is interesting to note the differences between the two models. The category for Information technology skills encompasses a number of ICT-related activities, which have all been re-arranged within CAVAL's more-service focused framework (Table 13).

Table 13: Information technology skills – CARL framework and CAVAL framework

Skill set	CARL framework	CAVAL framework
Integrated library systems (ILS)	Information technology skills	Collections and discovery
Emerging web technology, including social networking tools	Information technology skills	Personal skills > Skills
Electronic resources management	Information technology skills	Collections and discovery
Web page development	Information technology skills	Collections and discovery
Institutional repositories	Information technology skills	Collections and discovery
Learning management systems (LMS/CMS)	Information technology skills	Learning and teaching
Database management	Information technology skills	N/A

In the CAVAL document, IT skills are clearly viewed as integral to the different functional areas, rather than being a discrete area of competency. The skillsets included in CARL's category for Information literacy have also been reworked in the CAVAL framework (Table 14).

Table 14: Information literacy skills – CARL framework and CAVAL framework

Skill set	CARL framework	CAVAL framework
Information literacy	Information literacy	Learning and teaching > Institutional teaching & learning
Learning and teaching	Information literacy	Learning and teaching > Learning & teaching theory & practice
Institutional teaching and learning	Information literacy	Learning and teaching
Critical thinking & lifelong learning	Information literacy	Critical thinking: Personal skills > Skills Lifelong learning: Personal skills > Attributes
Reference services	Information literacy	Expressed as: Learning and teaching > Information services, Learning and teaching > Sources of information
Patron engagement	Information literacy	Expressed as: Learning and teaching > Client relationships

Beyond this, the CAVAL framework incorporates a number of skillsets which are not presented in the CARL framework, which may reflect the rapidly evolving world of academic libraries between 2010 and 2017. The skillsets presented in the CAVAL Research and publishing category once again stand out.

8Rs Redux: CARL libraries human resources study (2015)

Ten years after the initial *8Rs study* (2005) and five years after the CARL *Core competencies* framework was published, (2010), a second detailed workforce research project was undertaken, named the *8Rs Redux* study (DeLong et al., 2015). Data collection involved an institutional survey and an individual survey. In the institutional survey, CARL library leaders were asked about the value of the MLIS degree and other non-MLIS qualifications and the relative importance of specific competencies when they were making recruitment decisions, as well as to determine the level of ease or difficulty they had experienced when trying to appoint new staff. The respondents ranked the priority skills and personal attributes that were sought after in academic libraries:

- Specialist skills (details to be provided by the respondent)
- Generalist skills (i.e. candidates can work in a number of different areas)
- Interpersonal or 'people' skills
- Communication skills
- Entrepreneurial skills
- Technology skills
- Managerial skills
- Leadership potential
- Ability to handle high volume workload
- Ability to respond flexibly to change
- Ability to deal with a range of users
- Ability to learn new skills
- Dedication to the profession
- Commitment to organizational goals
- Friendly
- Reliable
- Logical
- Innovative
- Interest in professional development/continuing education
- Interested in contributing to the profession
- Other (to be specified by the respondent)

In academic libraries, the ten most difficult to fulfill competencies and attributes (DeLong et al., 2015, p.81) were ranked as:

1. Specialized skills
2. Leadership potential
3. Managerial skills
4. Business skills
5. Other non-MLIS education
6. Technology skills
7. Ability to flexibly adapt to change
8. Years of experience
9. Innovative
10. Logical.

The *8Rs Redux* study revealed that, since the initial data collected in 2003, the ratio of positions held by librarians and those held by non-MLIS professionals had shifted, with an increase evident for the cohort of *other professionals* (+7%). The term *other professionals* referred to staff employed across a range of functional areas: information technology, business and finance, human resources, facilities, communications, statistical/data analysts, subject experts (with PhD), copyright and archives (DeLong et al., 2015, p.67f.). The findings indicated that 21% of professional staff in CARL libraries were recorded as *other professionals*; this was in alignment with the data collected in the ARL annual salary survey 2013-2014 (ARL, 2014) where the proportion of *other professionals* was calculated as 22% (DeLong et al.,2015, p.61f.).

In terms of job classifications, it was found that "librarians were more heavily concentrated in public services" (DeLong et al., 2015, p.69) with 55% working in areas such as reference, circulation, instruction, learning commons etc, while the *other professionals* were employed in the functional areas of collections, technical services, information technology, management and 'other'. It was also reported that there was a degree of role overlap between librarians and paraprofessionals, with an increasing trend for paraprofessionals to perform tasks formerly completed by librarians, resulting from the growing requirement for librarians to perform roles such as teaching, collaborating with faculty staff and supporting research.

Competencies for librarians in Canadian research libraries (CARL, 2020)

A CARL working group was established in 2017, tasked with the review and updating of the 2010 framework, *Core competencies for 21st century CARL librarians*. The review process involved consultation across the academic library sector including a series of focus groups. The draft framework which was released in late 2019 stimulated further revisions to the document. The final framework was published in September 2020. The new *Competencies for librarians in Canadian research libraries* (CARL, 2020) extends the concepts of competencies and skills to include principles, values and mindsets. It is explained that mindsets may progressively evolve and develop over time.

In developing the document, CARL adopted "an aspirational approach… with firm grounding in the fundamental principles of the profession" (CARL, 2020, p.1) with the goal of aligning the aspirational professional values with the knowledge, skills and mindsets required by a successful academic library sector in Canada.

The framework opens with statements about the institutional context, along with the overarching (aspirational) characteristics of the academic librarian:

> The Canadian research library of the 21st century is an open and evolving ecosystem of learning and innovation: user-centered, dynamic, research-driven and dedicated to its diverse user communities.

> To flourish in this setting, Canadian academic librarians are highly specialized professionals, each with a unique skillset in research and practice and, ordinarily, a terminal degree in library and information studies. They are conscientious and dynamic creators, curators, and stewards of the knowledge created, generated, and preserved by the activities of the research library.

> (CARL, 2020, p.4)

As it is assumed that the academic librarian will have completed "a terminal degree in library and information studies", the focus of the framework is more on the 'soft' skills, personal qualities and mindsets that contribute to professional success and, by extension, to organisational success. In terms of LIS competencies, it has been noted that "too often in libraries we talk about the 'what' of what we are doing, without addressing the 'how'. Competencies... help us focus on those mindsets, aptitudes or skills that are going to advance the whole of what we are trying to accomplish." (IFLA Section for Education and Training, 2020).

The CARL document includes nine competencies which are required by academic librarians, each with a scoping description of the desired personal traits and behaviours that are relevant to the specific competency area (CARL, 2020, pp.4-13) (Table 15). Each competency is then expanded into a listing of the 'elements of the competency' which encompass the 'typical' areas of knowledge, skills and abilities, and mindsets.

Table 15: Competencies, with descriptors, for librarians in Canadian research libraries (CARL, 2020)

Competency	Description
Active learning & adaptation	Academic librarians employ fluid approaches to their work and the diverse environments they support and engineer. Predictive and proactive, they anticipate and prepare for future opportunities and challenges with clarity and foresight learned from previous experiences.
Collaboration	Academic librarians work collaboratively to achieve the strategic priorities of their libraries and universities. Connective and cooperative, they contribute to and sustain the living network of relationships and user communities that define the research library and its fundamental role within the academic environment.
Consultation & communication	Academic librarians intentionally communicate and actively seek input to advance the user-focused purpose, goals and vision of the research library. They initiate and encourage meaningful conversations and define outcomes that support and enhance the dynamic research, scholarship and pedagogy.
Curation & preservation	Academic librarians are stewards of the collection and curation of scholarly resources, and provide critical and innovative paths of discovery, interpretation, contextualization, dissemination, and preservation for future generations and communities of users.
Equity, diversity & inclusion	Academic librarians uphold the principles of equity, diversity and inclusion in their practice and research, and in support of the research library's diverse user communities. Culturally competent, they conscientiously aim to restore, implement and protect diverse ways of knowing and being in the world through all aspects of the practice of librarianship.
Engagement & participation	Academic librarians demonstrate engagement and commitment to the profession. They take an active part in the varied activities in their libraries and engage effectively with their user communities, researchers and colleagues.

Competency	Description
Evaluation & assessment	Academic librarians evaluate and analyze the research library's vast array of services, responsibly meeting user needs through continuing assessment. They enhance and improve the research library's evolving mission and vision.
Leadership & facilitation	Academic librarians provide and support leadership at all levels to drive and sustain the strategic priorities that contribute to the vital impact of the research library.
Vision & innovation	Academic librarians are important partners and practitioners in supporting and developing the genesis of diverse and dynamic knowledge, systems, and services through the ongoing development of and creative engagement with new tools and models of research. Inquisitive, innovative and entrepreneurial, academic librarians bring energy, expertise, and inspiration to the 21st century research library.

A range of professional skills are nonetheless embedded in the different competency areas, with many of these reflecting the competencies which were presented in the earlier CARL framework (2010) and also included in the CAVAL framework (2017). This situation was acknowledged: "Many key themes have carried forward from the initial set of 'Core Competencies' [CARL, 2010] into the 2020 version – but the nuances have changed" (IFLA Section for Education and Training, 2020). The original competency of Leadership and management has become Leadership and facilitation in the new version of the competency document and, rather than being a discrete competency in itself, the theme of information technology competencies, e.g. digital curation, digital preservation and emerging web technologies, is distributed throughout all nine areas (DeLong & Lewis, 2020).

Elements of the competency area of Collaboration (CARL, 2020, p.6) directly reflect those listed by CAVAL in Context knowledge (CAVAL, 2017, p.6), for example the understanding of the extra-institutional environment (regional, provincial, national and international organisations that affect library organisation and operation), and the understanding of the strategic and operational issues associated with the larger institutional organisation. However, the real emphasis is placed on the attributes of "collaboration, leadership, innovation and sustainability" (CARL, 2020, p.2). It as interesting to note that the verbs and adjectives used throughout the competencies intrinsically express these four attributes:

Verbs

Anticipate, prepare, choose, stay abreast, develop, support, solve, design, leverage, contribute, seek, build, strengthen, sustain, partner, model, apply, uphold, enable, foster, participate, encourage, maintain, mentor, negotiate, interact, evaluate, analyze, enhance, improve, engage, inform, drive, vision, inspire, empower, initiate, implement, motivate, assess, facilitate.

Adjectives

Predictive, proactive, flexible, open, new, forward-thinking, curiosity-driven, collaborative, connective, cooperative, active, meaningful, strategic, professional, authentic, supportive, excellent, mindful, respectful, diplomatic, equitable, evidence-based, critical, dynamic, creative, future, effective, important, inquisitive, innovative, entrepreneurial.

Additionally, the core values of the library profession are underscored in this document. While not explicitly mentioned, it was found that the 14 principal values discussed in IFLA's *Global Vision* report (IFLA, 2018a) are embedded in the CARL competencies, to embrace:

- Equal and free access to information and knowledge
- Commitment to dissemination of information and knowledge
- Protection of cultural heritage and memory (CARL: interpreted as the scholarly research record)
- Commitment to community engagement and empowerment
- Dedication to learning
- Diversity and inclusion (CARL: Equity, diversity and inclusion)
- Professionalism and ethical behaviour
- Embracing the shift to digital
- Freedom of expression
- Spirit of collaboration
- Trusted, authentic sources / transparency of information
- Safe, accessible place
- Innovation
- Resilience and adaptability to change.

The notion of change is central to the updated CARL competencies, with the academic library needing to adapt to the ever-evolving research landscape. The competency area of Curation & preservation (CARL, 2020, p.8) focuses strongly on the knowledge and skills associated with support for the research agenda in academic institutions. As the interest in the role of library staff as "partners and leaders in the initiation, production and dissemination of academic and scholarly research" (RLUK, 2021a) continues to grow, the theme of the competencies relating to research and data librarianship is examined in detail.

3.2.2   Research and data librarianship

A sample job advertisement for a data librarian position, posted by the (former) Australian National Data Service (ANDS), summarises the contemporary research library environment (ANDS, n.d.-a):

> There is an emerging role for libraries to support, more directly, the research of their institutions and to improve the integration of library resources with practices of researchers throughout the research lifecycle – to incorporate the process as well as the outputs of an institution's research. Increasingly governments and funding bodies are requiring that research funded by them should be accessible beyond the life of the project. Well managed research data is fundamental for discovery of and access to research resources.

> The Library provides a range of services to assist academic staff and postgraduate researchers to manage research resources. This includes research data and dataset management, development and support services for sharing information assets, and the management of scholarly outputs through an institutional repository. The Library participates in e-research projects and services supporting research data management needs of the University.

The type of skills required by an LIS professional working in this field have been articulated in a number of resources published in Australia, the UK, the US and Canada.

Principles and guidelines for Australian higher education libraries (CAUL, 2016)

CAUL has highlighted the strategic importance of academic staff in fostering the creation and dissemination of new knowledge, with the library providing the relevant services and program to researchers, expert advice, information leadership, collaboration and advocacy. The relevant skill sets required by staff relate to a range of scholarly research activities (CAUL, 2016, p.10):

- The research lifecycle
- Management of the university's research outputs and dissemination, including open access publishing
- Increasing the discoverability, use and impact of the university's research outputs
- Development of researchers' research and inquiry skills.

As part of institution-wide research agenda, the university library staff will work closely with academic researchers and higher degree research (HDR) students, with the institution's research managers, and with data scientists.

CAVAL competencies for academic and research librarians (2017)

The specific competency areas relating to research and data librarianship are presented in the Research and publishing competency area in the CAVAL framework (CAVAL, 2017, pp.9-10):

- Scholarly publishing cycle
- Research services and requirements
    - Applicable government, institutional and library services and policies (e.g. research ethics, reporting and submission requirements)
- Research models and methods
    - Awareness of the availability of a wide variety of research methodologies and methods (e.g. scientific, ethnographic, action research; experiments, observation, interviews; qualitative and quantitative)
- Data management
    - Institutional and discipline-based research data management frameworks and practices and requirements of major funding bodies, such as the Australian Research Council and National Health and Research Council, regarding data management plans, sharing and re-use of data
- Data analysis
    - Tools and techniques to analyse and visualise digital data (e.g. Geographic Information Systems (GIS), SciVal and bibliometric tools)
- Visualisation
    - The ability to understand how data can be transformed from tabular into visual data and visualisation tools to enable effective storytelling
- Digital humanities
    - Understanding of computational tools and digital tools in this field
- Digitisation
    - Techniques, tools and standards to help transform analogue data into digital data
- Publication
    - Options for publication, intellectual property rights, deposit requirements, open access models
- Collaboration
    - Joint research, presentation and publication by information and discipline experts

- Identity management and impact
  - Persistent researcher identifiers (e.g. ORCID), maximisation of research visibility, and measurement of impact (e.g. citation and altmetrics tracking).

ANDS Information specialists and data librarianship skills (n.d.-c)

Established in 2008, the Australian National Data Service (ANDS) was responsible for making Australia's research data assets more valuable for researchers and for research institutions. In July 2018, ANDS merged with two other digital research infrastructure agencies, National eResearch Collaboration Tools and Resources (Nectar) and Research Data Services (RDS), to form the Australian Research Data Commons (ARDC). The ARDC provides the Australian research community with access to a national digital research infrastructure to build research quality and to maximise research impact (ARDC, 2021a). The core work of ANDS included developing the skills and capacity of staff working in the field (ANDS, n.d.-b). The emerging role of data librarians, who are described as "professional library staff engaged in managing research data, using research data as a resource, or supporting researchers in these activities" was an important topic (ANDS, n.d.-c). An overview of their roles and responsibilities is still available on the old ANDS website:

- Data management
  - Data management plans
  - Copyright, intellectual property, privacy, ethics of reuse of data etc
  - Storing and managing data during and after the research project (curation)
  - Depositing data in archives, determining retention and disposal periods
  - Open access and publishing of data and/or metadata records
  - Research organisation policies affecting data
- Metadata management
  - Creating and maintaining metadata
  - Developing and applying metadata standards
- Using data (data as a resource)
  - Finding or obtaining data for use
  - Citing data
  - Data analysis tools and support services
  - Data literacy (an extension of information literacy to include the ability to access, assess, manipulate, summarise and present data)
- Developing, delivering or arranging:
  - Resources such as data management checklists
  - Training sessions on data management planning, data literacy, use of statistical and analytical tools
  - Awareness sessions or materials
- Referral to sources of information and advice, either within or external to the organisation.

The ARDC continues to be a key player in the provision of data skills training and provides links to the ANDS resources and to other professional development activities.

Data management: knowledge and skills required in research, scientific and technical organisations (Kennan, 2016)

A research project undertaken in Australia in 2015 sought to identify the knowledge and skills requirements for data librarianship and data management roles. The project involved interviewing practicing data professionals employed in libraries, research offices, data management departments and IT units (Kennan, 2016).

It was found that effective cross-functional teamwork skills, interpersonal skills and behavioural traits were regarded more highly than concrete knowledge or skills: high level communication, including advocacy and negotiation skills, were very important, along with "comfortable with change, have a service philosophy, willingness to learn, discretion, 'boundless curiosity' and be adaptable, assertive and open to new experiences" (Kennan, 2016, p.4). Training skills, to be able to run workshops and deliver presentations on data literacy, research policies and contemporary research practices, were critical. The need for relevant contextual knowledge about the research environment was also underscored (Kennan, 2016, pp.4-6):

- The institutional research environment
- Funding agency policies
- Appropriate subject speciality knowledge
- Discipline-specific research life cycles and cultures, methods and processes
- Scholarly communication
- Intellectual property and licensing.

A wide range of data-specific skills were viewed as important:

- Data literacy
- Data management lifecycle
- Data management plans
- Understanding the types of data (textual data, relational data, numeric data, cultural heritage data, geoscientific data etc)
- Data management processes (quality control, data flows etc)
- Physical data containers (texts, photographs, images, sound files etc)
- Data storage
- Data mining
- Data analysis
- Data visualisation
- Data curation (archiving, preservation)
- Digitisation of analogue data
- Metadata
- Digital Object Identifiers.

Information technology underpins the realm of data science, but it was felt that, rather than being directly involved in developing and delivering IT solutions, data librarians needed "just enough of an understanding of IT, to be able to 1) bridge the perceived communication gap between IT departments and researchers, and 2) understand the IT options and make informed decisions" (Kennan, 2016, p.6). Valuable areas of IT knowledge encompassed database structure and design, user-centred design, natural language processing tools and being 'programming savvy' (with XML, SQL, Java, Python etc) as well as the relevant systems and tools to support data sharing, data analysis and data visualisation.

The role of academic and research libraries as active participants and leaders in the production of scholarly research (RLUK, 2021)

Looking to the United Kingdom, Research Libraries UK (RLUK) has undertaken a major research project to explore the current and potential future roles of research and academic libraries within the scholarly research ecosystem (RLUK, 2021a). Given that the research report involved consultation with a wide range of stakeholders and has been amplified by a number of detailed case studies, it can be considered "one of the most comprehensive accounts of the role of libraries as research partners and leaders" (RLUK, 2021a). It should be noted that the term 'library' is used as a general one that represents the wider GLAM sector (galleries, libraries, archives and museums) plus other special collections. The report discusses the knowledge, skills and expertise that library staff contribute to scholarly research projects, covering eight areas of practice, each with its own facets:

- Collections-based skills and knowledge
  - Understanding how collections are used by researchers
  - Preservation
  - Digitisation
  - Open access publishing
- Digital skills and expertise
  - Digital scholarship
  - Digital humanities
  - Research data management
  - GIS and digital mapping
  - Computational analysis
  - Text and data mining
  - Skills development:
    - Digital literacy
    - Data and software management
    - Digitisation and digital content creation
    - Data visualisation
- Library studies/heritage science/museum studies knowledge
  - Research conducted within the LIS field that is relevant to researchers
- Literature search and review skills
  - Advanced literature searching
  - Systematic reviews
- Supporting public engagement and impact
  - Planning and running exhibitions
  - Developing outreach programs
  - Facilitating and measuring research impact
- Bid development
  - Idea generation
  - Development of grant applications
- Offering alternative perspectives
  - Interdisciplinary nature of library work
- Networking
  - The library's central position in the academy and on the campus
  - Provision of physical and digital spaces
  - Cross-institutional connections
  - Collaboration with different audiences and user groups.

One of the case studies features the University of Newcastle (UON) Library (RLUK, 2021b). The skills areas that are discussed in the case study directly align with those in the main RLUK report: research skills development, digital humanities, digitisation, research data planning, data analysis, systematic reviews, scholarly publishing, open access publishing, bibliometrics, research impact, community engagement and exhibition curation.

This scoping study built on three earlier studies: *The value of libraries for research and researchers* (RLUK, 2011), *Re-skilling for Research* (RLUK, 2012) and *Digital scholarship and the role of the research library* (Greenhall, 2019).

The value of libraries for research and researchers (RLUK, 2011)

The first report (RLUK, 2011) considered the key characteristics of library services that made a positive contribution to institutional research performance. Highlights included:

- Recruiting and retaining top researchers
- Helping researchers win grants and contracts
- Promoting and exploiting new technologies and new models of scholarly communications
- Developing repositories to increase the visibility of the institution and raise its research profile
- Building partnerships and collaborations to enhance research activities, especially through skills training
- Ensuring access to high quality research content as a key foundation for good research.

The positive characteristics of the library included the legacy perceptions of the library as a home of knowledge and its neutral position within the academic institution, the importance of the physical space, as well as the value of the research materials in the collection. In terms of the library staff, emphasis was placed on their information and organisational skills, their strong subject expertise, their role in developing the researchers' research and technology skills, and their commitment to a service culture.

Re-skilling for research (RLUK, 2012)

The second study published by RLUK focused on the roles played by subject and liaison librarians as they moved into the field of research support. It was acknowledged that, to perform these roles, the academic library staff would need new skill sets. The research lifecycle was used as the model for mapping the areas where librarians could contribute their skills (RLUK, 2012, pp.17-33):

- Conceptualising new research, developing proposals, and identifying funding opportunities
- Information discovery and literature searching
- Information management with bibliographic software
- Research data collection
- Research data discovery, management and curation
- Collaboration and networking
- Text and data mining and analysis
- Writing up and dissemination
- Compliance, intellectual property, data protection and copyright
- Preservation
- Quality assessment and measuring impact
- Commercialisation of research outputs
- Adoption of emerging technologies.

To successfully provide support for the researchers' information and data activities at these 13 touchpoints in the research lifecycle, it was argued that librarians would need to draw upon at least 32 skill sets (RLUK, 2012, pp.35-38):

- Related to the subject/discipline
    - Deep knowledge of their discipline/subject
    - Excellent knowledge of content (in all relevant media) available to their discipline/subject
    - Excellent knowledge of bibliographic and other finding tools in the discipline/subject
    - Knowledge to advise on relevant archive and special collections locally and elsewhere
- Related to the research process
    - Awareness of current and changing research interests
    - Understanding of a typical researcher's experience, including their workflow, and how researchers access and use information, within a discipline/subject and at different stages of the researcher's career
    - Ability to gain an appreciation of individual researcher/project needs, including effective listening skills
    - Knowledge of sources of research funding to assist researchers to identify potential funders
- Related to partnerships
    - Skills to build strong relationships with researchers and other campus professionals, to establish collaborative partnerships externally, and to manage client relationships
    - Awareness and ability to recognise the value of services and opportunities provided by national and international collaborative initiatives and agencies such as UKRR, RIN, and RLUK
    - Skills to participate effectively in research projects, including identifying a role for the library in the project, and assisting with bid and report writing
    - Ability to proactively advise and market appropriate library services to researchers
- Related to information
    - Outstanding skills in information discovery, literature searching etc
    - Ability to synthesise, analyse and produce digests of 'discovered' information
    - Knowledge to advise on the management of researchers' information, including its portability particularly for bibliographic management and referencing tools e.g. EndNote
    - Knowledge to advise on the manipulation and presentation of researchers' information
    - Knowledge to advise on citing and referencing, and the use of bibliographic management software
- Related to research data
    - Good knowledge of data sources available in the discipline/subject
    - Knowledge to advise on data management and curation, including ingest, discovery, access, dissemination, preservation, and portability
    - Knowledge to advise on potential data manipulation tools used in the discipline/subject
    - Knowledge to advise on data mining
- Related to information literacy
    - Excellent skills to design information literacy training (both face to face and online) to meet the identified needs of different types of researchers

- Related to scholarly communication
  - Ability to advise on current trends, best practice and available options in research publication and dissemination methods and models nationally and internationally, including scholarly communication and open access publishing
  - Ability to advise on preserving research outputs
  - Ability to advise on the preservation of project records e.g. correspondence
- Related to funders' mandates, assessment and other 'legal' requirements
  - Sufficient knowledge to support researchers in complying with the various mandates of funders, including open access requirements
  - Understanding of the national and local research assessment processes, and the requirements of the REF
  - Understanding of research impact factors and performance indicators and how they will be used in the REF, and ability to advise on citation analysis, bibliometrics, etc.
  - Understanding of author rights, copyright legislation and IP issues, and plagiarism to advise or refer as appropriate
- Related to metadata
  - Knowledge to advocate, and advise on, the use of metadata
  - Skills to develop metadata schema, and advise on discipline/subject standards and practices, for individual research projects
- Related to emerging and Web 2.0 technologies
  - Ability to advise on the value and use of mobile technologies, Web 2.0 and other communication tools (e.g. Mendeley, Virtual Research Environment) to researchers.

The *Re-skilling for research* report aimed to inform the managers of research libraries about the activities and skills that could be considered for role development, and to identify where skills development would be required. In addition, the report sought to help individual library staff identify opportunities for professional growth and to advise library schools and LIS training providers about future program and curriculum development.

Digital scholarship and the role of the research library (RLUK, 2019).

The report *Digital scholarship and the role of the research library* (Greenhall, 2019) presents the findings from a survey that sought to explore the nature and extent of digital scholarship activities in the UK, with particular attention paid to the infrastructure and funding requirements for the academic library, as well as the skills needed by the staff. The focus of the survey questions was on "support for digital scholarship activities" (Greenhall, 2019, p.65), including:

- Curating digital collections
- Digitisation/imaging of analogue material
- Digital preservation
- Metadata creation
- Data curation and management
- GIS and digital mapping
- Digital exhibits
- Project planning
- Digital publishing
- Project management
- Interface design and/or usability
- Visualisation
- Computational text analysis/support

- Technical upkeep
- Encoding content (e.g. TEI markup)
- Statistical analysis/support
- Database development
- 3-D modelling and printing
- Developing digital scholarship software.

Respondents were asked to indicate the extent to which the library was responsible for supporting the various digital scholarship activities, as well as where it was believed that there were skills gaps. The skills areas where support was less likely correlated with the most significant perceived skills gaps: visualisation, computational text analysis and support, GIS and digital mapping, and statistical analysis and support. While it appeared that these skills were generally supported by other units outside of the library, staff were keen to build the required competencies. It was acknowledged, however, that as the scale and diversity of scholarship activities would inevitably continue to grow, the research library could not be expected to have the staff with the full suite of desired skill sets. Therefore, collaboration and partnership skills would be critical in order to work closely with other departments and units, and to plan for initiatives that would provide opportunities for joint training and skills exchanges (Greenhall, 2019, p.39).

Competencies for librarians in Canadian research libraries (CARL, 2020)

The skills required by staff to support academic research have been included in CARL's competency area of Curation and preservation, which cover both print collections and digital resources. Academic librarians are described as "stewards in the collection and curation of scholarly resources" with the responsibilities to provide "critical and innovative paths of discovery, interpretation, contextualization, dissemination and preservation for future generations and communities of users" (CARL, 2020, p.8). The detailed elements of the competency area include knowledge of:

- The research data lifecycle, including data management planning, data collection/creation, documentation, processing, analysis, deposit, sharing, and reuse
- Legal and ethical considerations associated with research data
- Research repositories
- Data services (data manipulation and curation, metadata, big data, data analysis/vizualisation, business intelligence tools, data sharing statements/plans), emerging digital preservation infrastructure and data recovery
- Best practices, standards and protocols of digital curation (for digital documentation and research data in various formats
- The benefits and challenges of intellectual freedom, and enabling it through the development, management and preservation of the scholarly research record.

It was noted that some of the more traditional areas of collection development and management are also included in this competency.

Australasian Research Management Society Accreditation Program (ARMS, 2021)

The Australasian Research Management Society (ARMS) is a professional body with the mission to develop and promote best practice for research management, to develop research management professionals and to promote the profession of research management (ARMS, 2021a). ARMS has

collaborated with CAUL to develop the *Open Research Toolkit* (CAUL & ARMS, 2021a) which will support academic and research institutions implement and further develop open research policy, strategy and practice. This toolkit is discussed in section 4.4 of the report.

ARMS has over 3,500 members who are employed by universities, independent research institutions, government, and health research organisations in Australia, New Zealand and Singapore. Research management professionals are defined as "individuals who provide strategic, management, technical, administrative, or clerical assistance to support the research endeavour" (ARMS, 2021b). As many library and information professionals employed in academic and research are directly engaged in different aspects of the research endeavour, there is value in examining the ARMS knowledge framework to consider its relevance and application to professional practice.

ARMS highlights the importance of a mix of strong professional development, training and networking, along with supporting knowledge frameworks. The ARMS knowledge base encompasses six core areas of knowledge, and as it is presented with three levels of knowledge (Foundation, Management and Leadership) with the associated assumption that there will be progression from one level to the next, the term *ARMS Professional Development Framework (PDF)* is used (ARMS, 2021c). The six core areas of knowledge are listed as:

- Contextual knowledge
- Relational knowledge
- Technical knowledge
- The research funding cycle
- Higher Degree by Research candidature cycle
- Ethics and integrity
- Data and information management

The broad learning outcomes for each of these knowledge areas are mapped to the levels of Foundation, Management and Leadership.

ARMS has recently introduced a new 'points-based model' of accreditation to demonstrate three pathways of professional achievement (ARMS, 2021d):

- Pathway 1: Foundation level (25 points)
- Pathway 2: Established level (100 points)
- Pathway 3: Advanced level (150 points).

The pathways are based on the accumulation of points to reflect progression across the three levels. Each level of accreditation is described in detail on the website, with links to the modularised program of professional development, tailored to the research contexts in Australia, New Zealand, Singapore, the UK, with plans for specific modules for China, EU and US.

Once ARMS members have attained the level of accreditation that aligns with their experience, they are required to complete 60 hours of professional development over a three-year cycle (ARMS, 2021e). While ARMS itself offers a range of CPD activities including seminars, workshops, conferences and short courses, other opportunities encompass formal study, workplace learning and secondments that enhance research management and skills.

Librarians' competencies for e-research and scholarly communication (Joint Task Force: ARL, CARL, LIBER & COAR, 2016)

In 2013, the Association of Research Libraries (ARL), the Canadian Association of Research Libraries (CARL), the Association of European Research Libraries (LIBER) and the Confederation of Open Access Repositories (COAR) launched the Joint Task Force for Librarian's Competencies for E-Research and Scholarly Publishing. The aim of the task force was to identify the competencies required by staff working in the evolving academic research environment (Ruttenberg & Kuchma, 2013). The two frameworks released by the Joint Task Force were designed to support library roles in research data management and in scholarly publishing (Joint Task Force, 2016).

Librarians' competencies profile for research data management (2016)

In this competency profile, the functional areas of research data management fall into three broad categories (Schmidt & Shearer, 2016). Library staff will require some subject knowledge to support RDM, including an understanding of the disciplinary landscape, norms and standards (Schmidt & Shearer, 2016, p.3). The core competencies with the various areas of knowledge and understanding include:

1. *Providing access to data*

Knowledge of:
- Existing data centres, repositories and collections and data discovery mechanisms
- Data manipulation and analysis techniques and tools

Understanding of:
- The way data are organized and structured within collections
- Data licensing and intellectual property issues

2. *Advocacy and support for managing data*

Knowledge of:
- Funders' policies and requirements
- Data centres, repositories and collections
- Best practices for data structures, types, formats, vocabularies, ontologies and metadata
- Where to find information about data structures, types, formats, vocabularies, ontologies and metadata
- Data management plans and DMP tools
- Data publication requirements of journals
- Data sharing options, open access, IPR, licenses
- Data citation and referencing practices

Understanding of:
- Research practices and workflows
- Disciplinary norms and standards for data management

Ability to:
- Articulate benefits of data sharing and reuse
- Undertake data audit and assessment tools

3. Managing data collections

Knowledge of:
- Metadata standards and schemas, data formats, domain ontologies, identifiers, data citation, data licensing.
- Discovery tools
- Database design types and structures
- Data linking and data integration techniques
- Data repository and storage platforms

Ability to:
- Select and appraise datasets
- Actively manage research data
- Undertake digital preservation activities
- Apply forensic procedures in digital curation.

It is noted that related competency areas encompass open access and institutional repositories, information literacy, digital curation, digital preservation and digital collections (Schmidt & Shearer, 2016, p.4).

Scholarly publishing

The Joint Task Force for Librarians' Competencies in E-Research and Scholarly Publishing released a further *Librarians' competency profile for scholarly communication and open access*. This outlined the skills required in for work in four areas (Calarco et al., 2016):

- Scholarly publishing services
- Open access repository services
- Copyright and open access advice
- Assessment of scholarly resources.

The framework follows the same structure as the framework for research data management, with three elements for each area: knowledge, understanding and ability (Calarco et al., 2016, pp.3-4):

1. Scholarly publishing services

Knowledge of:
- Commercial and open access publishing platforms
- Publishing workflows and operational models
- Editorial processes
- Standards: Digital Object Identifiers (DOI), International Standard Serial Numbers (ISBN), International Standard Book Numbers (ISBN), persistent URL and citation options, such as OpenURL and CNRI Handle
- Funder mandates and requirements
- Metadata standards, and discovery tools

Understanding of:
- Current trends and issues in open access and scholarly communication
- Data curation and preservation practices
- Licensing issues pertaining to open access

Ability to:
- Manage OA publishing software services, such as Public Knowledge Project's Open Journal System (OJS) and Open Monograph Press (OMP)
- Work with local IT to develop capacity and infrastructure

2. Open access repository services

Knowledge of:
- Open access policies and requirements
- Repository software, metadata standards, and discovery tools
- Data formats, database design, data management, data manipulation tools

Ability to:
- Manage repository platform and update software over time
- Work with researchers on deposit of research outputs into the repository
- Liaise with publishers on issues relating to archiving policies including embargo periods and where applicable article processing charges

Understanding of:
- Current trends and issues in open access and scholarly communication
- Copyright and licensing issues pertaining to scholarly content
- Data curation and preservation practices

3. Copyright and open access advice

Knowledge of:
- Copyright and licensing issues pertaining to scholarly content, including tradition copyright as well as creative commons and other OA licenses
- Open access policies and requirements
- Current trends and issues in open access and scholarly communication

Understanding of:
- Traditional scholarly publishing system

Ability to:
- Raise awareness of OA, including practical questions such as financing and policy adherence
- Provide advice to faculty and graduate students on alternatives to transferring copyright to their original scholarly works

4. Assessment of scholarly resources

Knowledge of:
- Assessment criteria for journals and other resources
- Bibliometrics and altmetrics theory and practice

Understanding of:
- Faculty promotion and tenure policies and procedures
- Institutional assessment/planning interests in scholarly output

Ability to:
- Provide support to faculty in assessing journals and other scholarly resources
- Provide advice to library acquisition departments on quality indicators.

A further series of competency frameworks which broadly relate to the fields of electronic resources were published by NASIG (formerly known as the North American Serials Interest Group):

- *NASIG core competencies for scholarly communication librarians* (2020)
- *NASIG core competencies for core competencies for electronic resources librarians* (2021)
- *NASIG core competencies for print serials management* (2016).

Within the context of research and data librarianship, the core competencies for staff working in the area of scholarly communication encompass four key themes (NASIG, 2020, pp.3-5):

- Background knowledge of the scholarly publishing landscape
- Technical skills, as required by the specific area of responsibility
- Outreach and instruction relating to scholarly communication
- Team building, particularly for cross-departmental activities.

The framework then identifies five potential areas of professional responsibility, with a list of typical competencies included for each area (NASIG, 2020, pp. 5-12):

- Institutional repository management
- Publishing services
- Copyright services
- Data management services
- Assessment and impact metrics.

Once again, reference is made to data management services. NASIG stresses that "largely as a result of federal mandates, the provision of data management services is of increasing importance to all academic librarians" (NASIG, 2020, p.10). This competency area includes the knowledge and skills relating to:

- Data description and storage
- Data management planning
- Funder mandates related to data storage, access and retention
- Open source and hosted data repository solutions
- Collection development, organization of and access to third party data sets
- Optionally: text and data mining.

In addition to the 31 skill sets presented in the framework, the scholarly communications librarian (SCL) will need to draw on a suite of personal strengths (NASIG, 2020, p.2f.):

- Collaboration
- Communication skills (oral and written)
- Enthusiasm/ambition
- Generalist understanding of the environment of scholarship and publishing
- Comfort with change and ambiguity
- Being personable.

This final strength is based on effective and enthusiastic communication skills to deliver the SCL's message successfully: "ultimately, the lasting impression should be one of goodwill" (NASIG, 2020, p.3).

A current research study conducted by the Australian National University (ANU, 2021) involves an examination of the *Core competencies for scholarly communication librarians* (NASIG, 2020) and the *Librarians' competencies profile for scholarly communication and open access* (Calarco et al., 2016) with the goal of identifying the competencies required by Australasian library and information staff working in the area of open access policies and the scholarly communication landscape more broadly, or in the specific area of the publishing processes (Kingsley, 2021a). As part of the research project, a table combining the relevant scholarly communication competencies for eight fields of professional practice has been developed (Kingsley, 2021a, p.3):

- Institutional repository management
- Publishing services
- Assessment and impact metrics
- Copyright services
- Open access policies and scholarly communication landscape
- Data management and services
- Research practice
- Key personal strengths.

The key personal strengths are considered to be "a crucial factor in the success or otherwise of a staff member within the scholarly communication environment" (Kingsley, 2021a, p.2).

Further discussions on the skills required for work in open scholarship, digital curation, digital humanities librarianship and data librarianship are presented in Chapter 4 of this report.

3.3   Special library and information services

In Australia, the ALIA Special Libraries Working Group (ALIA, 2021b) provides advice on the wide-ranging issues that relate to 'special libraries'. This category of library and information service includes corporate, health, law and government libraries. ALIA has collated details of the activities and achievements of special libraries in a recent report: *ALIA working for special libraries 2016-2021* (ALIA, 2021c). One of the priorities was research into the value of the sector to explore the role of special librarians, to map the overlap with competing roles and service providers, and to identify the unique skillsets and attributes of special library and information professionals (Howard, 2017). Consideration is given to the role of information professionals in ensuring a strong user focus in the areas of access to and management of digital information, and the evaluation of information sources, services and systems (Howard, 2017, p.12). Librarians have responsibility for the content and context of information and data, as opposed to the technical infrastructure itself, which information and communication technology (ICT) professionals deal with (Howard, 2017, p.15).

Some groups of special librarians have worked on competency frameworks for their specific area of practice: the skills frameworks pertaining to business information professionals, health library and information professionals, legal library and information professionals, government library and information professionals, teacher librarians and allied professionals are discussed in the following sections of the report.

3.3.1 Business information professionals

In the US, the Special Libraries Association (SLA) has published the *Competencies for information professionals* (SLA, 2016) to specifically focus on the skills required by information professionals who work intensively with information, knowledge and data: "they take a holistic view of the role of information and knowledge in organizations and communities, and they are concerned with information and knowledge at all stages of their life cycle" (SLA, 2016).

SLA defines an 'information professional' as a person who "strategically uses information in his or her job to advance the mission of the (parent) organization… through the development, deployment, and management of information resources and services" (SLA, 2021). These information professionals may be employed in a variety of settings, including business libraries, information

centres, competitive intelligence units, knowledge resource centres or content management organisations. Typically, business information professionals may work in a small team within the parent organisation, or they may be embedded in different work teams, focusing on the management and use of information research and business intelligence to support the organisation's mission and strategic direction.

SLA competencies for information professionals (2016)

There are six core competencies in the SLA framework. Each competency includes a description of the roles and responsibilities of information professionals (Table 16), together with a listing of 'elements' of the competency which represent typical workplace activities.

Table 16: Competencies for information professionals (SLA, 2016)

Competency	Description of the competency
1. Information and knowledge services	Information professionals meet the knowledge and information needs of their organizations and communities by providing a diverse array of services based on an understanding of human information behaviour and a holistic assessment of the community or organization they serve… Their work may address any aspect of human engagement with information and knowledge, including the identification of information needs, discovery and retrieval, analysis and synthesis, sharing, management, organization and preservation.
2. Information and knowledge systems and technology	Information professionals use ICT effectively to meet the information and knowledge needs of their communities and organizations. They design, develop, implement, and operate information systems that are cost effective and employ state-of-the-art technologies.
3. Information and knowledge resources	Information professionals maintain a deep knowledge of the content resources available to meet the needs of the communities they serve… They systematically evaluate resources of potential value and prioritize the acquisition of resources based on their judgment of the value of each resource to the community. They also monitor the information marketplace and negotiate effectively with information vendors and content providers.
4. Information and data retrieval and access	Information professionals discover and obtain information effectively as needed by individuals and groups within their communities. They possess in depth knowledge of search and retrieval engine functions that enables them to perform complex and difficult information retrieval tasks. They also apply information analysis tools and methods to extract meaning and actionable insights from the information retrieved.

Competency	Description of the competency
5. Organization of data, information and knowledge assets	Information professionals organize and manage data, information and knowledge assets so that they are findable, usable and accessible over their defined life span. They establish policies for the organization, preservation, and retention of these assets, taking into account the mission and operational needs of their institution. They establish requirements and procedures for metadata and evaluate and adapt industry standards for classification and categorization systems, storage and preservation, location, and connectivity to ensure that assets are properly managed.
6. Information ethics	Information professionals combine a strong moral and ethical foundation with an alertness for issues that commonly emerge in information and knowledge work… They act with "integrity, competence, diligence, honesty, discretion and confidentiality through creating and sustaining an environment that facilitates mutual trust amongst employers, clients or other individuals served, and the profession" (SLA *professional ethics guidelines*). They model ethical information behavior for others in the workplace and lead the development of policies and processes to foster information ethics throughout their organizations.

These core competencies seek to underscore the unique role played by information professionals to support the management and use of information, knowledge and data in modern organisations, with information ethics representing the competency "that permeates all the others" (Matarazzo & Pearlstein, 2017). SLA also outlines some of the more generic or 'enabling' personal and interpersonal competencies which are viewed as being "vital for professional success and career development" (SLA, 2016):

- Critical thinking, including qualitative and quantitative reasoning
- Initiative, adaptability, flexibility, creativity, innovation, and problem solving
- Effective oral and written communication skills, including influencing skills
- Relationship building, networking, and collaboration, including the ability to foster respect, inclusion, and communication among diverse individuals
- Marketing
- Leadership, management and project management
- Life-long learning
- Instructional design and development, teaching, and mentoring
- Business ethics.

The importance of information professionals having a clear understanding of the knowledge, skills and abilities that underpin their jobs and their careers has been emphasised: this essentially remains the individual's own responsibility (Matarazzo & Pearlstein, 2017). Beyond having this understanding, however, information professionals also need to be able to articulate the value of their skills to their employers and clients, particular in situations where they are working alone or in a small team in a large, complex organisation, especially when "it is often difficult for customers of

our information centers/services to understand precisely what we do" (Matarazzo & Pearlstein, 2017). It has been argued that improved communication about competencies for information professionals "builds the currency value of these competencies and strengthens the profession" (Everhart, 2017).

3.3.2   Health library and information professionals

One of the library and information sectors which has been described as "information intensive and complex" (Sen et al., 2014, p.11) is the field of health librarianship. For many years, those working in health library and information services have been actively seeking to develop and refine their understanding of the changing roles played by health information professionals, particularly in terms of the current and future skill sets required for professional practice. The wide variety of roles have been examined, grouped together under the general categories of the librarian as information provider and educator, the librarian who analyses information and manages knowledge, the librarian within research and evidence-based practice, and the librarian as decision maker.

Through a series of case studies, it is shown that "librarians offer both transferable skills and specialized knowledge that can be applied in a variety of ways" (Brettle & Urquart, 2012, p.xix). The stand-out skillsets for health librarians dealing with changes in healthcare were identified as (Brettle & Urquart, 2012, p.178):

- Commitment to the power of informed decision making, along with implicit curiosity
- User focus
- Understanding of information sources
- Understanding of the information preferences of their clientele
- Attention to detail, combined with the ability to listen
- The desire to communicate
- A strong service ethic.

It is believed that these skills and attributes represent a strong foundation for health librarians as they develop new roles which rely on liaison and collaboration with other professionals in the health sector, such as medical staff, managers and administrators, IT staff and health data managers. Brettle & Urquart (2012) stress that evidence-based practice – an accepted norm for work in the health sector – is the significant common denominator for future roles (p.179) and that the main driver for interprofessional collaboration should always be positive health outcomes for the patients (p.80).

Sen et al. (2014) undertook a research project, funded by the European Association for Health Information and Libraries (EAHIL), to explore the diversity of roles and skills within the sector, to identify future skills needs, and to consider the impact that health and information professionals on the quality of healthcare. Data collection involved a survey, focus groups and interviews. As the research participants worked in many different roles, they identified a wide variety of skills: LIS-specific skills (e.g. knowledge of information sources, information literacy and search skills), specialist skills (e.g. technical skills and pedagogical skills), management skills, and 'soft skills' or personal qualities (Sen et al., 2014, p.12f.). Although it was found that the distribution of skillsets aligned with the three-tier competency framework developed by Corrall (2005) (LIS skills and technical skills at the core; management skills; and generic or personal and interpersonal skills), the most important contributions made to healthcare by health library and information professionals

related to their specialised LIS skills. These encompass "searching skills, information literacy skills, teaching and training others to access and search the evidence base, current awareness, and more specialist evidence-based skills, such as critical appraisal and working on systematic reviews" (Sen et al., 2014, p.13).

As part of another research study conducted to identify the competencies required by health librarians in Ireland, Lawton & Burns (2014) undertook a summary comparison of the education policies issued by five international library associations. The researchers examined the policies issued by the Irish Health Science Libraries Group (HSLG), the Health Libraries Group (HLG) of CILIP in the UK, the Medical Library Association (MLA) in the US, the Canadian Health Libraries Association (CHLA) and ALIA HLA. It was found that while a total of 38 competencies were included in the various policy documents, only ten competencies were common to the five associations (Lawton & Burns, 2014, p.86). These ten competencies included:

- Understanding the healthcare environment
- Managing and organising health information
- Training and education
- Management and organisational skills
- Leadership
- Technology
- Legal issues
- Systematic reviews
- Critical appraisal
- Communication.

The findings were then compared with discussions published in the professional literature, specifically in terms of the different roles played by health library and information professionals, e.g. health librarians as educators, clinical librarians and informationists, embedded librarians and, librarians working in data management. The researchers also analysed four recent job advertisements to determine the relevancy of the ten primary competencies that had been identified and found that nine were included as desired skillsets and/or experience in the search for candidates. The competency area relating to legal issues was the only one not mentioned in the advertisements. The importance of continuing professional development is stressed to ensure that health library and information professionals continue to upskill to meet the needs of a rapidly changing healthcare environment (Urquart, 2012; Sen et al., 2014).

As a national group of ALIA, Health Libraries Australia (HLA) is the professional organisation which represents members of the health library sector in this country. ALIA HLA outlines the broad reach of health library and information professionals, with members working "in hospitals and other clinical facilities, research institutes, regulatory agencies, pharmaceutical and biotechnology companies, government departments, regional health centres, professional colleges, universities, cooperative research centres, not-for-profit and community organisations, and parts of public library services" (ALIA HLA, 2021a). By providing their clients with access to secure and trustworthy sources of authoritative information and by ensuring that their services are recognised as critical and fundamental to the information governance structures of the parent organisation, the expertise and experience of these qualified health library and information professionals underpins the delivery of evidence-based healthcare which all Australians depend on.

For over a decade, the Australian health library community has focused on the education and training needs for the information professionals to highlight the importance and value of the qualifications required for practice. A census of the health library workforce was conducted in late 2014 - early 2015 which revealed that almost two thirds (64%) of respondents held university qualifications as librarians and just over one fifth (22%) held VET qualifications as library technicians; the remaining 14% had qualifications and experience in other fields (Kammerman, 2016, p.31). HLA members also participated in the broader census of the health information workforce which included an investigation into academic qualifications, professional development and professional engagement. In this study it was found that there was a balance between respondents who held an undergraduate degree (44%) and those with postgraduate qualifications (43%) (Butler-Henderson & Gray, 2018, p.16). The analysis undertaken by Gilbert et al. (2020) provided deeper insights into the data provided by the respondents who identified as being in the 'health librarian' occupational group. It was found that 27% of these respondents held a bachelor degree and 53% had postgraduate qualifications (graduate certificate or graduate diploma: 37%, master's degree: 12%, or PhD: 4%) (pp.46-47). Respondents also mapped the areas of competence they required for health information work to the Certified Health Informatician Australasia competency framework (Health Informatics Society of Australia, 2013), with the results emphasising "the dominance of technological and data science competencies" (Gilbert et al., 2020, p.44).

Preliminary work on a skills framework for health librarians had been undertaken in a major research project which culminated with the report *Health librarianship workforce and education: Research to plan the future* (ALIA HLA, 2011). The research objective was to identify the requirements for an education and professional development framework that would ensure that health librarians had a clearly defined scope of practice, with "the specific competency-based knowledge and skills to successfully contribute to the design and delivery of high quality health services in Australia" (ALIA HLA, 2011, p.4). It was argued that a strong future for health library sector depended on health librarians being accepted as "true health professionals with a highly valued area of specialisation" (ALIA HLA, 2011, p.49).

HLA believes that "a basic, first qualification in librarianship or a library technician, from an ALIA-accredited university or TAFE education provider course" represents the necessary entry point into the LIS profession in Australia and, accordingly, this qualification equips new entrants to the health library and information sector with the foundational knowledge to enable them to gain initial employment (HLA, personal communication, January 10, 2022). On top of the qualification, practical work experience and ongoing professional development sets the new entrant up "for a successful and diverse career, across library sectors if they wish".

The HLA report (ALIA HLA, 2011) made a key recommendation for the development of a specialised framework of competency based standards which would delineate the scope of practice for the health library and information profession. Further recommendations addressed the need for strategies to ensure that appropriate education and professional development pathways for the LIS workforce were created, with the understanding that unique solutions for health librarians may be required, and the need for a certification and revalidation program which aligned with best practice in the health sector, based on the ALIA Professional Development Scheme, with a compulsory three-year cycle of relevant professional development activities. The professional learning issues are discussed in Chapter 8 of this report.

An initial competency framework evolved from HLA's workforce and education research project (ALIA HLA, 2011). It was based on the US Medical Library Association's framework but adapted for the Australian health library context (MLA, 2007, pp.4-5). The MLA released a new interpretation of their framework a decade later (MLA, 2017). The rapidly changing health services environment in this country prompted HLA to review and update the HLA competencies (ALIA HLA, 2018). The first stage of the review involved a comparison of the existing Australian competencies with the international equivalents, including the US (MLA, 2017) and the UK (NHS Health Education England & CILIP, 2014), although it was found that no relevant comparisons could be made for New Zealand, Ireland or Canada (Ritchie, 2020, pp.30-31).

A succinct summary of the various health library competency frameworks and the scope of practice for members of the Health Information Workforce Alliance (HIWA), the various domains of knowledge and skills, and the specialist qualifications were presented in a poster prepared for the EAHIL 2019 conference (Ritchie & HLA Executive, 2019). The tables presented in the poster indicated that there were "only minor differences in the broad competency areas" in the various frameworks promoted by the different library associations (Ritchie & HLA Executive, 2019), although health librarians are identified as the only group of health information professionals which provides reference and research services to their clients (Competency Area 2) (Ritchie, 2020, p.32).

ALIA HLA Competencies (2018)

HLA's review work involved wide consultation on the draft documents, culminating in a revised set of Australian competencies which are described as "more precise, comprehensive and forward-looking" (Ritchie, 2020, p.31). Ritchie states that, as the HLA competencies represent "a set of specialised skills", they inevitably build on and extend the knowledge, skills and attributes acquired by an entry-level librarian or library technician during their studies (Ritchie, 2020, p.32). Eight competency areas are presented in the HLA framework (ALIA HLA, 2018), as outlined in Table 17.

Table 17: ALIA HLA Competencies (2018)

Competency area	Scope
1. The health environment	The health sciences, the health and social care environment, and the policies, issues and trends that impact on these environments
2. Reference and research services	Health reference and research services and delivering best practice information services
3. Resources	The management of health knowledge and information resources in a variety of formats
4. Leadership and management	Leadership and management theory and practice
5. Digital, ehealth and technology	The digital and ehealth context, and the technology and systems used to manage data, information and knowledge resources in the delivery of library and information services
6. Health literacy and teaching	Health literacy, curricular design and instruction, and teaching information skills associated with evidence based practice
7. Health research	Health research and the application of health research methodologies
8. Professionalism	Health information professionalism

A description is provided for each of the competency areas, with a listing of topics which are viewed as being typically relevant to the field of practice. As with ALIA's *Foundation knowledge for entry-level library and information professionals* (ALIA, 2020e) the topic areas are conceptual, rather than detailed and time-bound. While a number of the topic areas in the HLA framework align directly with those in the ALIA core knowledge framework, the lens of the context of the health sector is applied to offer greater specificity. This is emphasised in the first competency area which relates to the health environment, i.e. health sciences, the health and social care environment, and the policies, issues and trends that impact on those environments. The topics in the description for this competency area are clearly context-specific (ALIA HLA, 2018, p.1):

> A health library and information professional maintains current knowledge of health and social care systems in Australia, including developments in:
>
> - The health and social care, research and education sectors
> - Health systems research, policy development and models of care
> - Research into illness and disease, and into prevention and wellness
> - Health sciences professions, their education frameworks and academic pathways, registration and professional development requirements, and library and information services needs
> - The legal and regulatory frameworks for health systems and professions
> - Policies and standards of relevant government, corporate and professional bodies
> - Ethical issues in health and health information practice
> - The parent organisation's structure and aligning with the organisation's strategic direction.

It was found that the HLA competencies resonated with the categories of competencies included in the *CAVAL competencies for academic and research librarians* (Table 18), which includes "the core competencies for librarians working in academic libraries in an intense research environment" (CAVAL, 2017, p.4) (see section 3.2.1 of this report).

Table 18: Competency frameworks – ALIA HLA framework and CAVAL framework

ALIA HLA Competencies	CAVAL competencies for academic and research librarians
The health environment	Context knowledge
Reference and information services	Expressed as: Learning and teaching > Information services Learning and teaching > Sources of information
Resources	Collections and discovery
Leadership and management	Leadership and management
Digital, ehealth and technology	[Distributed across the competency categories]
Health literacy and teaching	Learning and teaching
Health research	Research and publishing
Professionalism	Professional engagement

In the CAVAL framework, digital capabilities are viewed as integral to the different competency areas, as is also the case in the MLA competency framework (see below), whereas HLA provided the rationale for including technology skills as a separate competency: "The HLA Executive decided that

with the growing importance of digital and ehealth (especially following the 2018 release of the Australian Digital Health Agency's *National Digital Health Strategy*) we needed to strengthen the informatics/technology-related competency area as an essential skillset for all health information professionals, rather than diminish its prominence" (Ritchie, 2020, p.31).

The Professional Knowledge and Skills Base: Healthcare sector guide (UK) (2021)

In 2021, CILIP released the updated Professional Knowledge and Skills Base (PKSB) (see section 2.3 of this report). The PKSB includes the new *Healthcare sector guide* (NHS Health Education England & CILIP, 2021) which provides an interpretation of the PKSB for the library and information professionals working in the healthcare sector in the UK. The structure of the PKSB comprises three elements:

- Element One: Core principles
    - Ethics and values
    - Professional development
    - Organisational and environmental context
    - Wider library, data, information and knowledge context
- Element Two: Professional expertise
    - Collection management and development
    - Data management
    - Information exploitation and use
    - Information governance and compliance
    - Information management
    - Knowledge management
    - Literacies and learning
    - Records management and archiving
    - Research
- Element Three: Generic skills
    - Customer focus, service design and marketing
    - Leadership, advocacy, influencing and personal effectiveness
    - Strategy, planning and management
    - Technology and communication

As discussed in section 2.3, the three elements are presented in the format of a wheel, with the different areas of skills and expertise forming the spokes of the wheel, framed by the four core principles. At relevant points in the *Healthcare sector guide*, information is provided about what the particular section of the PKSB might look like for those working in the healthcare sector. The information relating to the core principle of 'Organisational and environmental context' naturally reflects the need for a detailed understanding of the health and care sectors, for example:

- Being familiar with national healthcare policy; following the publication of new national plans and policies
- Keeping up to date with national strategy and policy for health knowledge and library services
- Understanding the requirements of the national quality assurance process for health knowledge services.

Beyond these guidance statements, the PKSB for the healthcare sector fundamentally encompasses the same areas of skills and expertise as the general PKSB (CILIP, 2021a).

Health literacy, underpinned by digital literacy, has been recognised as an area of particular interest for CILIP and NHS Health Education England (HEE) where health librarians will partner with other stakeholders, including information providers, health professionals and public library staff, to provide training, to develop and to embed health literacy skills at the local community level (Carlyle, 2021).

MLA competencies for lifelong learning and professional success (2017)

In the US, the Medical Library Association (MLA) released the current version of the MLA competency framework in May 2017 (MLA, 2017), describing it as "a concise, clear and comprehensive, and forward-looking guide to lifelong learning and success for health information professionals" (MLA, 2017, p.2). The broad term of 'health information professional' has been used to embrace medical librarians, health sciences librarians, health information specialists, informaticists, and other professional groups.

It is stated that the shared belief in the essential role of quality information to support improved health across the community was integral to health information professionals, with a set of core principles guiding their practice (MLA, 2017, p.1):

- The use of scientific evidence in making health care decisions
- Public awareness, access to, and use of high-quality health information
- Lifelong learning and professional development
- Advancement of health information research and evidence-based practice
- Community and collaboration within and outside of the profession
- Irreproachable ethical standards.

The framework also aims to guide the development of "preprofessional academic preparation and continuing education programs" (MLA, 2017, p.2). Further discussion on this topic is presented in Chapter 8. The framework encompasses six competencies, with an explanation provided for each (Table 19).

Table 19: MLA professional competencies (MLA, 2017)

Competency	Description
1: Information services	A health information professional locates, evaluates, synthesises and delivers authoritative information in response to biomedical and health inquiries
2: Information management	A health information professional curates and makes accessible bioscience, clinical, and health information data, information and knowledge
3: Instruction & instructional design	A health information professional educates others in the skills of bioscience, clinical, and health information literacy
4: Leadership & management	A health information professional manages personnel, time, budget, facilities, and technology and leads others to define and meet institutional goals

Competency	Description
5: Evidence-based practice & research	A health information professional evaluates research studies, uses research to improve practice, conducts research, and communicates research results
6: Health information professionalism	A health information professional promotes the development of the health information professions and collaborates with other professionals to improve health care and access to health care information

A number of performance indicators are provided which represent the "typical, observable and measurable skills and activities that demonstrate a competency" (MLA, 2017, p.3), with accompanying interpretations of 'Basic' and 'Expert' levels of proficiency. It is explained that the verbs used in the performance indicators reflect the language of Bloom's taxonomy of learning objectives (bloomstaxonomy.net, n.d.). The majority of skills and activities tend to reflect the broad scope of library and information work in academic and research institutions, with reference made to responsibilities in areas such as scholarly publishing, data management, critical appraisal of research, and instructional technologies. The specialised context of health information is accentuated in the skills and activities relating to systematic reviews, evidence-based research, national health policy etc.

It is noted that in the MLA framework, technology-related skills have been woven throughout the six competencies, rather than presented as a standalone competency. Increased emphasis has been placed on evidence-based practice and research skills, particularly with the aim of focusing on the growing interest of library and information professionals to engage in evidence-based research into their own practice.

There are clearly parallels between the scope of the competencies presented in the HLA framework and the MLA framework (Table 20).

Table 20: Competency frameworks – ALIA HLA framework and MLA framework

ALIA HLA Competencies	MLA professional competencies
The health environment	n/a
Reference and information services	Information services
Resources	Information management
Leadership and management	Leadership & management
Digital, ehealth and technology	[Distributed across the competency categories]
Health literacy and teaching	Instruction & instructional design
Health research	Evidence-based practice & research
Professionalism	Health information professionalism

It is acknowledged that the MLA competencies do not address personal attributes, even though these are regarded as being important to professional success. A separate *Code of ethics for health sciences librarianship* (MLA, 2010) is referred to as an essential source of further professional guidance (see also section 5.2 in this report).

The systematic review competencies framework (2017)

Systematic reviews (SRs) represent a highly specialised area of professional practice for health library and information professionals. The work involves partnering with and/or providing consultancy services to health researchers to conduct complex literature searching. Valuable skills include refining research questions, preparing search protocols, detailed searching of the medical literature, managing the data and contributing to the writing process. A competency framework for health librarians who were involved in systematic review projects was developed by Townsend et al. (2017). Six competencies were identified, representing "a broad set of areas in which librarians can develop skills and expertise to support their integration with SRs in their institutions and as part of their professional practice" (Townsend et al., 2017, p.270) (Table 21).

Table 21: Systematic review competencies framework (Townsend et al., 2017, pp.272-274)

Competency	Scope note
Systematic review foundations	How and why SRs are used in the health sciences and how to effectively find SRs
Process management and communication	Resources and skills involved in SR team communication and effective project management
Research methodology	Ability to comply with and advise teams on SR standards and best practices
Comprehensive searching	Ability to construct and document replicable search strategies in appropriate literature databases and other information resources
Data management	Processes, tools, and skills involved in using data and ensuring data integrity, archiving and tracking for the SR process
Reporting	Ability to communicate literature search methods and results according to established standards so that they are suitable for publication and are replicable

Each competency has "specific knowledge items and skills that serve as indicators of competence" (Townsend et al., 2017, p.270). The competency area of Data Management, for example, includes four indicators which relate to work with SRs:

- Citation management software (e.g. EndNote, RefWorks, Mendeley)
- SR software, including strengths, limits, and uses (e.g. Distiller, Covidence, Rayyan)
- Data extraction tools and forms
- Appropriate data and process archiving, including version tracking and PRISMA data collection.

To outline an approach to applying and measuring the indicators of competence, the authors draw upon Miller's Pyramid for Clinical Assessment (Miller, 1990) which identifies four levels of skills divided into two zones: the cognitive zone with the skills 'Knows' and 'Knows How', and the behavioural zone, with the skills 'Shows' and 'Does') (Townsend et al., 2017, p.269). The researchers adapted Miller's Pyramid to work with three levels of competence:

- Knows: knowledge gathering and interpretation
- Shows: demonstration of knowledge
- Does: knowledge integrated into practice.

This competency framework evolved from an exploratory study, with the expectation that the competencies and indicators were likely to continue to evolve as new roles emerged for library and information professionals who collaborated with researchers to publish systematic reviews.

3.3.3 Legal library and information professionals

Law librarianship is recognised as another specialised area of library and information practice. Law librarians work in a variety of situations, including academic law libraries, court libraries, parliaments, government departments, private law firms and barristers' chambers. There are a number of national library associations which support and promote the interests of law librarians and legal information professionals, including the Australian Law Librarians' Association (ALLA), New Zealand Law Librarians' Association (NZLLA), British and Irish Association of Law Librarians (BIALL), American Association of Law Libraries (AALL), Canadian Association of Law Libraries (CALL) and the Organisation of South African Law Libraries (OSALL). The International Association of Law Librarians (IALL) is a worldwide network of law library professionals who are committed to sharing legal knowledge and promoting access to legal information (IALL, 2021). The importance of professional development for law librarians is acknowledged by all these library associations, with annual conferences and a variety of training activities organised for their members. However, the concept of a competency framework has only been addressed by two organisations: BIALL and AALL.

British and Irish Association of Law Librarians (BIALL) professional skills framework (2016)

The *BIALL professional skills framework* was developed in 2016. The goal was to draft a framework which offered "a detailed overview of the skills and experience which legal information professionals need to carry out their role" (BIALL, 2016, p.138). It was designed to supplement, rather than replace other frameworks, such as CILIP's PKSB (see section 2.3). The working group emphasised that this was a 'skills framework', as opposed to a 'competencies framework': the emphasis is on "concrete, measurable skills more than abstract concepts" (BIALL, 2016, p.138). Anticipated uses of the framework include serving as a benchmarking tool for professional development, a resource to assist managers with staff performance reviews, and supporting the recruitment of new staff.

The BIALL framework is structured around broad domains, each with a number of topics which relate to typical activities in a law library (Table 22).

Table 22: BIALL professional skills framework (2016)

Domain	Topic
1. Research	- Legislation - Case law - Journals and textbooks - Precedents and court forms - Internal knowledge systems - European Union – general - European Union – legislation - European Union – case law

Domain	Topic
	• European Union – competition issues • Other jurisdictions (US as an example) • Private international law/conflict of laws • Public international law • Human rights • Business research
2. Collection development and management	• Collection development and collection development policy (CDP) • Collection management • Library management system (LMS) • Serials management • Collection promotion
3. Cataloguing and classification	• Bibliographic and authority records • Library management system and library catalogue • Controlled vocabulary • Information architecture and metadata • Physical preparation of hard copy materials • In-house publishing
4. Financial management	• Invoices and payments • Financial planning and strategy • Cost control • Charging for library services • Vendor relations • Budgeting • Business cases
5. Compliance and ethics	• Copyright and data protection • Plagiarism • Online licences and contracts for subscriptions • Confidentiality and professional ethics • Equality and diversity
6. Customer service	• Reference interview • Customer awareness • Customer focus • Accessibility • Working with people • Delivery of services
7. Training and presentations	• Online and software resources • Hardcopy resources • Skills training • Induction • Group size • Supporting documents • Library guides/tutorials • Learning and teaching methods
8. Marketing and organisational awareness	• Organisational awareness • Public relations • Networking
9. Soft skills	• Communication • People management • Time management

Domain	Topic
	• Leadership and influencing • Project management
10. IT	• Online and software resources • Word processing and document management • Spreadsheets • Presentations • Intranets and websites • Virtual learning environments • Social media • Device proliferation • New platforms

Every topic is presented with the typical knowledge requirements and expected skills, mapped to three levels:

- Level 1: Basic awareness; can carry out the role under supervision
- Level 2: Good understanding of the concepts and tasks; able to work unsupervised
- Level 3: Comprehensive understanding; able to support and supervise others.

The resulting document is extremely detailed and, arguably, very task oriented. As it is stated that the document should help legal information professionals at all stages of their career, some tasks are limited to one level, e.g. physical preparation of hard copy materials is a Level 1 activity: "Addition of labels/security/protective covers as required by organisation's cataloguing standards to make stock 'shelf ready' (BIALL, 2016, p.155), whereas the responsibilities relating to in-house publishing sit at Level 3 (BIALL, 2016, p.156). While the first domain, Research, is highly context specific in terms of the skills requirements for legal research, the other domains tend to be aligned with the skillsets commonly presented in other frameworks for library and information professionals.

American Association of Law Librarians (AALL) Body of Knowledge (BOK) (2018)

The Body of Knowledge (BOK) released by AALL was designed "to serve as a blueprint for career development" for contemporary legal information professionals (AALL, 2018, p.1). It presents six domains of knowledge, defined as core content areas of expertise, which cover both competencies and skills. Competencies refer to the "key knowledge areas required for proficiency in each domain", while skills are associated with the "actions demonstrating the required knowledge and experience to appropriately practice the competency" (AALL, 2018, p.1). The domains of knowledge and the associated competencies are outlined in Table 23.

Table 23: AALL Body of Knowledge (2018)

Domain	Competency
1. Professionalism + leadership at every level	• Communication • Decision making • Strategic problem solving • Collaboration + team building • Ethics • Continuous learning + professional development

Domain	Competency
2. Research + analysis	• Knowledge of law + legal systems • Knowledge + navigation of information sources • Critical evaluation + synthesis of information • Ethical use of information
3. Information management	• Collection development • Organization + access • Preservation + retention • Knowledge management • Information governance + risk management
4. Teaching + training	• Instructional design + planning • Presentation + delivery • Assessment + metrics
5. Marketing + outreach	• Promotion of value • User experience • Partnerships + community relations • Advocacy
6. Management + business acumen	• Vision + strategic planning • Budgeting + procurement • Funding + development • Benchmarking + data analysis • Human resources • Project management • Facilities management

The AALL framework is more conceptual in scope than the BIALL framework, with most of the competencies considered general LIS competencies. Skills relating to technology and systems are distributed through the framework:

- Information management
    - Acquisitions technologies and systems
    - Knowledge management technologies
    - Technologies to ensure the efficient use and governance of information

- Teaching + training
    - Current technologies to enhance learning
    - Current and developing technologies to aid in the delivery of information
    - Current technologies to analyze and present collected assessment data
- Marketing + outreach
    - Use of appropriate technologies to support strong presentation skills.

There are very few specific competencies relating to the law library environment: knowledge of legal systems, areas of law and legal materials sits within the domain of research and analysis, and the promotion of law libraries and legal information within the larger community is included in marketing and outreach. In the domain of advocacy, emphasis is placed on the significance of legal information as a community resource:

- Champion new ways to share legal information expertise and promote services both inside and outside the organization
- Work to secure access to justice through ensuring reliable, long-term access to authentic legal resources

- Engage in outreach to local, state, and national lawmakers and propose policy solutions to legal information issues
- Promote legal information services to those in need.

It is stated that the BOK is a future-focused resource which will be reviewed and updated on a regular basis. Beyond the BOK, in the careers area of the AALL website, law librarian skills are summarised as encompassing data analysis, legal research, information management, knowledge management, legal research instruction, and business development (AALL, 2021).

The AALL website also includes a policy statement which was published in 1988 to outline the association's expectations for LIS education programs accredited by the ALA. There are two groups of competencies: general and subject-specific. The general competencies include reference and research services, library management, collection management, and information organisation and classification. The policy then states that "graduate library education for law librarianship must, at a minimum, provide basic competencies in the legal system, the legal profession and its terminology, literature of the law, law and ethics" (AALL, 1988). It is acknowledged that there is no expectation for LIS students to develop an in-depth understanding of the law.

One further resource is the legal research competency area of the AALL website, centring on the *Principles and standards for legal research competency* (AALL, 2020).

- The principles are broad statements of foundational, enduring values related to skills research, as endorsed by AALL
- The standards provide a set of more specific applications of those norms or habits that demonstrate one's commitment to and attainment of the principles
- The competencies are activities that demonstrate knowledge and skill, with concrete measures or indicators of achievement of the abilities required to meet the standards.

The audience for the legal research competency extends beyond law librarians to include librarians in other areas of professional practice, law school faculty and students, legal practitioners, and continuing legal education providers. The principles of legal research are underpinned by the principles of information literacy, including identifying, finding, evaluating, applying and acknowledging sources of information, with specific reference to the characteristics of legal information resources. The standards themselves focus on the goal of ensuring that legal professionals are information literate, with law librarians holding primary responsibility for teaching and assessing skills development.

3.3.4   Government library and information professionals

Government libraries represent a category of special library and research service, operating within local government, state government and national government contexts, which are usually dedicated to specialised subjects and collections, including health and law. Government librarians support and contribute to policy development and analysis, provision of tailored advice, and the management of government information resources. The skills and competencies of government librarians were examined in the literature reviews prepared for two Australian studies, one into Queensland government libraries (Hallam, 2010) and one into Commonwealth government libraries (Hallam & Faraker, 2016).

As there is no skills framework tailored to the work of government library and information professionals in Australia, the most relevant documents are considered to be those published in the US: SLA's *Competencies for information professionals* (SLA, 2016) and the Federal Library and Information Center Committee's (FLICC) *Competencies for federal government librarians* (FLICC, 2011). The SLA framework, which emphasises the importance of the business context for special librarians, is discussed in section 3.3.1. The competencies include:

- Information and knowledge services
- Information knowledge systems and technology
- Information and knowledge resources
- Information and data retrieval and analysis
- Organization of data, information, and knowledge assets
- Information ethics.

The library and information professionals' application of these competencies should demonstrate their value to the government agency's organisational objectives and operations and support its goals for greater efficiency and effectiveness (Hallam & Faraker, 2016).

The FLICC framework presents two areas of competency: foundational competencies and functional competencies (FLICC, 2011). Foundational competencies are described as "basic or commonplace competencies shared across many functional areas and career stages", whereas functional competencies represent the knowledge, skills and attributes needed to perform in "the major functional responsibilities or duties that define the profession" (FLICC, 2011, p.5). The functional competencies cover the spectrum of typical duties required to deliver the library and information services to agency clients.

The foundation competencies are grouped into six areas (Table 24).

Table 24: Foundational competencies (FLICC, 2011)

Area	Competency
Cognitive analysis	- Attention to detail - Creative thinking - Decision making - Mathematical reasoning - Problem solving - Reasoning
Communication	- Listening - Oral communication - Oral expression - Reading - Writing - Written comprehension - Written expression
Emotional intelligence	- Conflict management - External awareness - Flexibility - Influencing/negotiating - Interpersonal skills (i.e. respect, concern and empathy for others)

Area	Competency
	• Self-management • Teamwork and collaboration
Leadership	• Advocacy • Integrity • Mentorship • Personal leadership
Professional knowledge	• Applied learning • Ethical framework • Foundational knowledge (i.e. about libraries and librarianship)
Technology application	• Hardware • Software

The eight functional competency areas each comprise a number of competencies, with each competency presented with three different levels, or stages, of expertise: Basic (basic operational knowledge, skills and abilities), Advanced (significant knowledge, skills and abilities) and Expert (extensive and strategic knowledge, skills and abilities within certain functional areas) (FLICC, 2011, p.7). The expected stages are also linked to the focus of the individual's growth as their career develops. The functional areas and competencies are presented in Table 25.

Table 25: Functional competencies (FLICC, 2011)

Area	Competency
Agency and organization knowledge	• Agency and organization context and culture • Agency's regulations, policies and guidelines • Federal laws and regulations
Collection management	• Collection access and control • Collection acquisitions • Collection development • Resource protection and preservation • Resource sharing • Rights management
Content organization and structure	• Content structure, design, and dissemination • Controlled vocabularies, taxonomies, thesauri, ontologies • Information architecture • Resource description
Knowledge management	• Knowledge management principles • Knowledge management methodologies
Library leadership and advocacy	• Administration and management • Best practices and evaluation • Business processes • Professional development • Program and project management • Program development and outreach • Public relations and library promotion • Strategic and operational planning • Supervision and human resources

Area	Competency
Library technology management	• Assistive technologies and 508 compliance • Enterprise information technology (IT) • Information assurance and security • Library and content management systems • Social media, collaborative, and mobile technologies • Technology
Reference and research	• Analytical studies and reports • Customer education and training • Reference services • Resources, search strategies and tools
Specialized knowledge, skills and abilities	• Languages • Specialized subject knowledge

The immediate context of the government agency has primary importance, with the expectation that library and information professionals will develop their understanding of the parent organization, especially to align the services with the mission and goals of the agency and to advocate for strengthening the library's place and role in the agency. The need to have specialised knowledge about the subject area of the agency and to understand the culture and information seeking behaviours of the disciplinary specialists was also critical. It was interesting to note the foreign language competency presented in the area for specialised knowledge and skills, based on the language "specified by the organization, or required by the discipline" (FLICC, 2011, p.37). The FLICC document was found to be the only framework reviewed in this study which mentioned linguistic abilities.

3.3.5 Teacher librarians

The term 'school library' is the general term that is used to refer to the library and information service in an educational environment, to support teachers and students at either the primary or secondary level. Other terms include the 'library resource centre', 'library media centre' and 'library learning commons'. It has been noted that while libraries are – or should be – an integral part of the school infrastructure, "it is only in countries such as Australia and the USA that most schools… have professional staff who are both teachers and librarians" (Herring, 2007, p.27). They tend to be known as 'teacher librarians' in Australia and 'school librarians' in the UK and the US. The *IFLA school library manifesto*, prepared by the IFLA Section for School Libraries, clearly states the centrality of qualified school library professionals: "The school library program and its qualified school library professionals focus on student growth by providing equitable access for learning experiences, resources, and learning spaces that enable all members of the school community to become engaged critical thinkers, effective readers, and responsible users, evaluators, and creators of information in multiple formats" (IFLA Section for School Libraries, 2021, p.1). The IFLA manifesto outlines the multiple responsibilities of the school librarian but does not discuss them in terms of competencies or skillsets.

Australia

In this country, ALIA has long supported the importance of school library staff holding qualifications in both classroom teaching and teacher librarianship to ensure that they provide "the professional expertise required for the complex roles of teacher librarians" (ALIA & ASLA, 2016a). The statement

on teacher librarian qualifications, issued jointly by ALIA and the Australian School Library Association (ASLA), was first released in 1994, and subsequently revised in 2009 and 2016. This statement outlines the imperative for staff who:

- Hold the same level of education and preparation as classroom teachers
- Hold formal qualifications in education, and librarianship or knowledge/information/ technology management
- Hold qualifications in librarianship which allow for eligibility for Associate (i.e. professional) membership of ALIA
- Participate regularly in continuing professional learning.

ASLA has described the value of the unique characteristics of teacher librarians, based on the fact that "curriculum knowledge and pedagogy are combined with library and information management knowledge and skills" (ASLA, 2018). They play three major roles as curriculum leaders, information specialists, and information services managers. The facets of the different roles are outlined by ASLA (2018), with emphasis placed on collaboration with other stakeholders, information skills development, emerging technologies and library management (ALIA & ASLA, 2001, pp.60-62):

- Raising staff awareness of the need for students to acquire information skills and of the importance of resource-based learning in developing these skills
- Promoting the use of the information process as a framework for the development of information skills, and monitoring students; development as information users
- Ensuring the effective integration of information resources and technologies into student learning
- Maintaining literacy as a high priority, engaging students in reading, viewing, and listening for understanding and enjoyment
- Involving students in the operation of the information centre to contribute to their understanding of the role of educational information services in lifelong learning and reading
- Providing access to information resources through efficient systems for organising, retrieving and circulating resources
- Interpreting information systems and technologies for students and teachers in the context of curriculum programs
- Providing specialist assistance to students using technology and information resources in and beyond the school and for independent research
- Developing and managing information systems and services responsive to student and teacher needs
- Providing a stimulating, helpful environment which is a focal point and showcase for students' learning achievements.

The route to becoming a teacher librarian is open to people with an undergraduate degree in education. As many teacher librarian positions require the teacher librarian to be a registered teacher, the candidate's education qualification should be awarded by an initial teacher education program (ITEP) accredited by the relevant State- or Territory-based teacher regulatory authority. ITEPs are required to meet the program standards set out in the Australian Institute for Teaching and School Leadership (AITSL) *Accreditation of initial teacher education programs in Australia: Standards and procedures* (AITSL, 2020) (M. Merga, personal communication, February 2, 2022).

Candidates study for a postgraduate qualification in Teacher Librarianship, which is accredited by ALIA. At the current time, the Master of Education (Teacher Librarianship) program offered by

Queensland University of Technology is in teach-out mode (concluding in mid-2022), which leaves the course offered by Charles Sturt University (CSU) as the only higher education institution accepting students (ALIA, 2020b, p.7).

In terms of the development of knowledge and skills, the current curriculum for the Master of Education (Teacher Librarianship) encompasses eight subjects, six of which are core (CSU, 2021a):

- Introduction to teacher librarianship
- Resourcing the curriculum
- Teacher librarian as leader
- Describing and analysing education resources
- Research in practice
- Professional experience and portfolio.

Additionally, students complete two elective units which cover topics relating to literature, learning spaces, digital environments or professional networking.

The interests of teacher librarians are promoted and represented collaboratively by the ALIA Schools group (2021) and ASLA (2021a). The role of teacher librarians within the school community focuses on advocating for and building effective library and information services and programs, specifically through learning and teaching activities, management, leadership, collaboration and community engagement (ALIA & ASLA, 2016b). Responsibilities in the area of learning and teaching include the promotion of reading and literature, literacy, digital and information literacy, inquiry-based learning, ICT integration and resourcing the curriculum.

Issues relating to professional standards in education are managed by AITSL (2021). The *Australian professional standards for teachers* represent the framework of standards for teachers to define the elements of high quality, effective teaching to deliver improved educational outcomes. There are seven standards grouped into three domains of teaching (professional knowledge, professional practice and professional engagement) and each is mapped to four career stages (graduate, proficient, highly accomplished and lead) (AITSL, 2011). The teacher librarian community subsequently worked on an interpretation of the teaching standards to provide guidance about their application to professional practice in school libraries, with the document *Teacher librarian practice for the Australian professional standards for teaching* published by ALIA Schools in 2014.

The document differentiates between professional practice for teacher librarians in primary schools and in secondary schools. The professional standards include (ALIA Schools, 2014):

- Professional knowledge
    - Standard 1: Know students and how they learn
    - Standard 2: Know the content and how to teach it
- Professional practice
    - Standard 3: Plan for and implement effective teaching and learning
    - Standard 4: Create and maintain supportive and safe learning environments
    - Standard 5: Assess, provide feedback and report on student learning
- Professional engagement
    - Standard 6: Engage in professional learning
    - Standard 7: Engage professionally with colleagues, parents/carers and the community

Each standard comprises a number of focus areas, which are illustrated by examples of practice and the types of documentary evidence that could be provided for evaluation and assessment (Table 26).

Table 26: Example of guidance for teacher librarians for Professional knowledge: Standard 1
(ALIA Schools, 2014, p.3)

Primary (Proficient) Professional Knowledge: Standard 1 *Know students and how they learn*		
Focus area	**Practice**	**Evidence**
3.3 Physical, social and intellectual development and characteristics of students Use teaching strategies based on the knowledge of students' physical, social and intellectual development and characteristics to improve student learning.	• Include a range of activities: individual, group and whole class, to cater for individual student success • Provide rich digital and print resources	• Planners: annual, term, weekly • Research guides for a number of topics across the upper primary levels
3.4 Understand how students learn. Structure teaching programs using research and collegial advice about how students learn.	• Invite colleagues to observe lessons and provide feedback about your teaching • Document feedback and set goals to implement specific actions • Read relevant articles from educational journals to stay up to date with current research findings • Contribute to discussions on social media sites	• Journal log of professional reading • Goal setting from observation

Additional resources have been developed by ASLA to further explain the application of the standards within the field of teacher librarianship. Two evidence guides have been published which outline the specific role of the teacher librarian, supported by a list of examples of evidence to "give the teacher librarian a sense of how he/she might meet that standard" (ASLA, 2021b). The evidence guides have been prepared for staff who are at the proficient career stage (ASLA, 2014a) and at the highly accomplished career stage (ASLA, 2014b). Teacher librarians are encouraged to refer to the evidence guides as part of their preparation for professional learning and development.

Merga (2020) analysed the content of 40 job descriptions for teacher librarians in Australia covering the period 2010-2020. It was found that the majority of positions were from "well-resourced, non-government schools in high socioeconomic contexts and located in major cities" (Merga, 2020, p.892). Thirty-four responsibilities were identified in the advertisements; the most common areas included:

- Teaching and facilitating learning
- Collaboration and teamwork
- Collection and resource building and provision
- Literacy education
- Support information skills in staff and students (information and digital literacy)
- Managing the library and learning environment
- Communication and interpersonal skills.

It was noted that three quarters of the job advertisements stated that there would be "delegated and unspecified responsibilities" (Merga, 2020, p.900) which indicated that the successful candidates were expected to perform additional duties, beyond those stated for the job. Ongoing skills development was a priority for teacher librarians, particularly to be able to keep up to date with new innovations in ICT and to provide leadership in the integration of technology with teaching and learning activities across the school community.

These wide-ranging responsibilities reflect the multiple ways in which teacher librarians support the school community in meeting the educational goals determined by the school leadership and the relevant educational authorities. Concerns have been expressed that the Australian professional standards for teachers (AITSL, 2011) and school performance management processes do not easily acknowledge the professionalism of the teacher librarian in the area of LIS. This can result in the under-recognition of the role itself and the under-valuing of the contributions teacher librarians make to the school community. The ALIA Schools Expert Reference Group (ERG) has stressed the need to acknowledge and respect the professional knowledge and skills embedded in the role of teacher librarian (L. Guthrie, personal communication, December 22, 2021).

United Kingdom

The range of skills and knowledge required by library and information professionals is presented in the Professional Knowledge and Skills Base (PKSB) published by CILIP (2021a, p.1) (see section 2.3 in this report). The school librarian's professional journey in the UK includes the route to Chartership, i.e. professional recognition, along with regular revalidation to demonstrate commitment to career-long learning. Guidance is provided about the application of the PKSB for specialised LIS practitioners such as health librarians and the committee of CILIP's School Libraries Group has also interpreted the PKSB for members working in school libraries. A table was created for the earlier version of the PKSB to provide guidance about the type of supporting evidence that applicants could use in their portfolio to record and reflect on learning outcomes. The table presents all of the skillsets included in the various areas of professional expertise in the PKSB, with a brief note about the relevance of the skillset in school library practice and a number of questions to stimulate the applicant's reflection on their own practice and achievements (Band et al., 2019). As the focus is primarily on the school librarian's professional activities, however, there is little specific guidance about knowledge and skills.

It has argued that professional activities often emphasise the mechanics of a role and fail to acknowledge "the intangible elements of intellect and creativity as essential parts of professional expertise needed to lead a successful school library" (Bentley et al., 2016a, p.14). A dynamic and vibrant learning environment in a library and successful student learning outcomes demand more than simple technical skills. The librarian's own information and digital literacy skills, for example, are central to the students' skills development – "not just in handling information but in generating it creatively and intellectually" (Bentley et al., 2016b, p.31). It is therefore critical that professional skills are made visible so that other stakeholders understand and respect the unique contribution the librarian makes to the school community.

United States

In the US, the American Association of School Librarians (AASL), a division of the ALA, is the national professional association for teacher librarians and the school library community (AASL, 2021a). The AASL has published the *National school library standards for learners, school librarians and school libraries* (AASL, 2018a) which emphasises the critical connection and interaction between the learner and the school librarian. The AASL has stated that school librarians should hold a master's degree in LIS accredited by the ALA, or a master's degree with a speciality in school librarianship recognised by AASL in an educational unit accredited by the Council for the Accreditation of Educator Preparation (CAEP) (AASL, 2021b), which combines academic study and professional preparation for work in library and information science, education and technology (AASL, 2016). The value of the qualified school librarian lies with their education and professional certification which enables them to perform "interlinked, inter-disciplinary, and cross-cutting roles as instructional leaders, program administrators, educators, collaborative partners, and information specialists" (AASL, 2018b).

The accreditation of the postgraduate academic programs for school librarians is guided by the *ALA/AASL/CAEP school librarian preparation standards* (AASL, 2019). These document aims to support school librarians as they qualify, grow and mature during their careers (Burns & Dawkins, 2019). The five preparation standards (Table 27), which comprise a total of 23 components with supporting explanations, are presented in the body of the document. The professional knowledge base with accompanying references for each standard and component are outlined in a later section of the document.

Table 27: *The ALA/AASL/CAEP school librarian preparation standards* (AASL, 2019)

Standard	Summary
1. The learner and learning	Candidates in school librarian preparation programs are effective educators who demonstrate an awareness of learners' development. Candidates promote cultural competence and respect for inclusiveness. Candidates integrate the National School Library Standards considering learner development, diversity, and differences while fostering a positive learning environment. Candidates impact student learning so that all learners are prepared for college, career, and life.
2. Planning for instruction	Candidates in school librarian preparation programs collaborate with the learning community to strategically plan, deliver, and assess instruction. Candidates design culturally responsive learning experiences using a variety of instructional strategies and assessments that measure the impact on student learning. Candidates guide learners to reflect on their learning growth and their ethical use of information. Candidates use data and information to reflect on and revise the effectiveness of their instruction.

Standard	Summary
3. Knowledge and application of content	Candidates in school librarian preparation programs are knowledgeable in literature, digital and information literacies, and current instructional technologies. Candidates use their pedagogical skills to actively engage learners in the critical thinking and inquiry process. Candidates use a variety of strategies to foster the development of ethical digital citizens and motivated readers.
4. Organization and access	Candidates in school librarian preparation programs model, facilitate, and advocate for equitable access to and the ethical use of resources in a variety of formats. Candidates demonstrate their ability to develop, curate, organize and manage a collection of resources to assert their commitment to the diverse needs and interests of the global society. Candidates make effective use of data and other forms of evidence to evaluate and inform decisions about library policies, resources, and services.
5. Leadership, advocacy, and professional responsibility	Candidates in school librarian preparation programs are effectively engaged in leadership, collaboration, advocacy, and professional networking. Candidates participate in and lead ongoing professional learning. Candidates advocate for effective school libraries to benefit all learners. Candidates conduct themselves according to the ethical principles of the library and information profession.

The knowledge base that underpins the school librarian preparation standards bears a close relationship with several sets of educational standards, especially the *National school library standards for learners, school librarians, and school libraries* (AASL, 2018a), the International Society for Technology Education's *ISTE standards for educators* (ISTE, 2017) and the Interstate Teacher Assessment and Support Consortium's *InTASC model core teaching standards and learning progressions for teachers* (InTASC, 2013).

An earlier document, the *School librarian competencies based on the PSELs* (AASL, 2017), was developed following a comparative analysis of the *Professional standards for educational leaders (PSELs)* (National Policy Board for Educational Administration, 2015) and the 2010 edition of the *AASL standards for the preparation of school librarians* (AASL, 2010). The PSEL competencies were augmented to reflect the core activities of school librarians: focusing on the use of data and information, digital learning experiences, the LIS profession's ethical principles, the belief in equity, diversity and inclusion, collaboration and networking, and the commitment to professional engagement and career-long learning. Burns and Dawkins (2021) stress that new school librarians would need to have a working knowledge of the different sets of standards as they enter professional practice. Accordingly, the authors present a table which maps the *ALA/AASL/CAEP school librarian preparation standards* (AASL, 2019) to the *National school library standards for learners, school librarians and school libraries* (AASL, 2018a).

Another dimension of standards for school libraries is evident in the *Future Ready Schools* initiative, launched in 2014. The goal was to offer schools "a structure for digital learning visioning, planning and implementation" (Future Ready Schools, 2014a) to encourage the use of educational technology strategies to elevate student achievement. The core belief for the program is "no matter what the child's zip code or family income", every child deserves access to (Future Ready Schools, 2014b):

- A personalized student-centered learning environment
- Robust learning experiences that prepare students for an increasingly technology-driven workforce and world
- Learning that taps into passions and interests for deeper engagement and agency
- Research-based digital learning strategies implemented by caring and qualified teachers
- A clear pathway to postsecondary success through which every child achieves his or her potential.

Five different leadership strands represent the various stakeholder groups which support student learning: *Future Ready District Leaders, Future Ready Principals, Future Ready Technology Leaders, Future Ready Instructional Coaches*, and *Future Ready Librarians*. School librarians are recognised as leaders who foster student learning outcomes through their professional practices, programs and spaces (Future Ready Schools, 2018a). The *Future Ready Librarians* framework outlines the competencies and professional practices school librarians demonstrate to achieve student-centred learning outcomes (Future Ready Schools, 2018b):

- Literacy:
    - Inspires and supports the reading lives of both students and teachers, through inclusive collections, diverse experiences and instructional opportunities to empower learners as effective users and creators of information and ideas
- Curriculum, instruction, and assessment
    - Curates digital resources and develops the digital curation skills of others
    - Builds instructional partnerships to design and implement evidence-based curricula and assessments that integrate elements of deeper learning, critical thinking, information literacy, digital citizenship, creativity, innovation, and the active use of technology
    - Empowers students as creators, encouraging them to become increasingly self-directed as their create digital products of learning, applying skills in critical thinking, collaboration, and authentic real world problem solving
- Personalized professional learning
    - Facilitates personalized professional learning to cultivate a broader understanding of the skills that comprise success in a digital age (e.g. critical thinking, information literacy, digital citizenship, technology)
- Robust infrastructure
    - Ensures equitable digital access to collection tools using digital resources and programming
- Budget and resources
    - Invests strategically in digital resources to support student learning
- Community partnerships
    - Cultivates community partnerships with the school and local community to promote engagement and a community of readers
- Data and privacy
    - Advocates for student privacy

- Use of space and time
    - Designs collaborative spaces that promote inquiry, creativity, collaboration and community
- Collaborative leadership
    - Leads beyond the library by participating in the school district's vision and strategic plan for digital learning.

The *National school library standards* (AASL, 2018a) have been 'crosswalked' with the *Future Ready Librarians* framework (Future Ready Librarians, 2018b) (AASL, 2018c), as well as with the *ISTE standards for learners* (ISTE, 2016) and the *ISTE standards for educators* (ISTE, 2017) (AASL, 2018d) to help school librarians engage with educators and educational administrators about their roles and the contributions they can make to improved student learning outcomes.

In the *National school library standards* (AASL, 2018a) the competencies for learners are complemented by the competencies of effective school librarians (Burns, 2018). This means that there are significant opportunities for school librarians to engage in critical reflection and professional growth, as well as to engage in advocacy activities to promote their role in student achievement (Burns, 2018; Burns, 2020). Critical reflective practice facilitates a deeper appreciation of the knowledge and skills that underpin practice, so that the understanding of "professional competence challenges school librarians to continuously monitor and self-assess while being receptive to professional growth" (Burns, 2018, p.55). By extension, the evidence gathered as part of the reflective practice process can be shared with professional colleagues and used to demonstrate the value of the expertise of school librarians.

Canada

A Supreme Court of Canada decision, handed down in November 2016, sought to resolve longstanding differences between the British Columbia Teachers' Federation and the British Columbia government regarding legislative provisions about class sizes and staff:student ratios for specialist teachers, including teacher librarians. It was hoped that, following the court decision, the role of the teacher librarian, which had been sorely depleted in British Columbian schools, would be reinvigorated so that students could benefit from the fresh focus on information skills, including technology literacy, inquiry and problem solving, critical literacy, creativity and knowledge construction, and information ethics (Ekdahl, 2017). The court decision immediately led to an increased demand for more teacher librarians with an accompanying surge in "applications to enrol in a teacher librarian diploma program at the University of British Columbia and the sudden awareness of an immediate need for instructors in the program" (Ekdahl, 2017, p.106). However, the employment of school librarians remains funding-dependant in the different educational districts of the province.

In 2014, the Canadian Library Association (CLA) released a national set of standards for school librarians, entitled *Leading learning: Standards of practice for school library learning commons in Canada* (CLA, 2014). Responsibility for the standards has moved to Canadian School Libraries (CSL) and the publication is now a living document which is continuously updated (CSL, 2020a). There are five core standards designed to underpin high quality learning and teaching (CSL, 2020b):

- Facilitating collaborative engagement to cultivate and empower a community of learners
- Advancing the learning community to achieve school goals
- Cultivating effective instructional design to co-plan, teach and assess learning
- Fostering literacies to empower life-long learners
- Designing learning environments to support participatory learning.

Each standard has six or seven themes which encompass different partnerships and collaborations, planning, design and leadership, pedagogy and instructional design, and literacies. The wide range of competencies required by teacher librarians is shaped by the 34 themes in the standards. The fourth standard, Fostering literacies to empower life-long learning, includes seven themes (CSL, 2020c):

- Literacy leadership
- Engaging readers
- Information literacy
- Critical literacy
- Digital literacy and citizenship
- Cultural literacy
- Literacy partners.

The various themes are expanded into a continuum of indicators that reflect the progressive stages of implementation and growth within the school community. The indicators represent a type of maturity model for the library learning commons, moving from Exploring to Leading (CSL, 2020d):

Exploring > Emerging > Evolving > Established > Leading

CSL has made a concerted effort to link the standards of practice to the entry-level training programs offered by Canadian universities and to professional learning. Koechlin and Brooks Kirkland (2018) examined four teacher librarian training programs through the lens of the *Leading learning* standards framework to determine the degree of alignment between education and practice. The review covered the programs were offered by the University of Toronto (Ontario), Queen's University (Kingston, Ontario), University of British Columbia and University of Alberta. Various courses are offered at the certificate level, diploma level and master level, and the curriculum provides the opportunity for students to focus on provincial policies, frameworks and resources.

The University of British Columbia offers both the certificate (five subjects) and the diploma (ten subjects) in the Teacher Librarianship Education Program. The courses cover educational leadership, inquiry-based learning, literacy, information literacy, digital literacy, collaborative planning and teaching, curriculum design and implementation, multi-media resources, and learning technologies. The curriculum is founded on four conceptual pillars (Asselin, 2018):

- Libraries as physical and digital spaces of literacy and learning in communities
- Librarians as educational leaders (curriculum, pedagogy, curation/resources)
- Social justice, digital citizenship, critical thinking and equity as core values of libraries
- Learners (including librarians) as inquirers and designers.

"*Leading learning* standards were carefully integrated into each of the course both in terms of pedagogy and curriculum. Students actually experience the standards in their own learning, as well as how to implement and support them in professional practice" (Asselin, 2018).

A small study was undertaken to identify the core competencies of teacher librarianship as perceived by students graduating with a Master of Education from the Teacher Librarianship by Distance Learning (TLDL) program at the University of Alberta (de Groot & Branch, 2011). In responding to a survey, graduates provided information about which topics covered in their studies were felt to be of little value in their professional practice, and which emerging workplace topics were missing from the curriculum. While the research was undertaken a decade ago, the findings revealed the importance of emerging technologies, the integration of technology with learning and teaching, professional collaboration, educational leadership, and evidence based practice. These topics are still central to the current *Leading Learning* standards of practice for teacher librarians across Canada (CSL, 2020a).

3.3.6   Allied professions

In 2015, the Chartered Institute for Library and Information Professionals (CILIP) and the Archives and Records Association UK and Ireland (ARA) released a research report on the mapping of the information professions in the UK (Hall et al., 2015). The professional domains included in the study were library, archives, records, information management and knowledge management (LARKIM), illustrating the wide scope of the general field. A couple of years later, in the US, ARMA International published the *ARMA guide to the information profession* (ARMA, 2018a). This followed ARMA's merger with the Information Coalition (Hart, 2018), which was responsible for the Information Body of Knowledge (InfoBOK) – a body of knowledge for the information industry. The *ARMA guide* lists the disciplines of the information profession. These disciplines, often referred to as 'allied professions', include archiving, compliance, information management, records management, information governance, information privacy and information security. An expanded version of the guide is available to provide additional commentary and analysis on the various areas of knowledge (Inglis, 2018; Lewis, 2018).

Thus far, the competency frameworks discussed in this section have all reflected the knowledge and skills required by information professionals working in the different library sectors, including public, academic, special and school libraries. Graduates from LIS programs may, however, also be employed as information managers, archivists or records managers. In section 2.3, it was noted that the CILIP Professional knowledge and skills base (PKSB) presented the broad range of skills and knowledge required by people working in the information, knowledge, library and data profession (CILIP, 2021a, p.1), while ALIA's *Foundation knowledge for entry-level library and information professionals* is prefaced by the statement that "the phase 'library and information agencies' includes libraries, archives, records and cultural agencies" (ALIA, 2020e, p.1). Nevertheless, there are also specialised competency frameworks which reflect the skills requirements for the allied professions. In this chapter, the frameworks and research studies which inform the education and training needs of information professionals working in the different fields are examined.

Galleries, Libraries, Archives and Museums (GLAM)

The acronym GLAM encompasses 'galleries, libraries, archives and museums' and refers to the institutions which collect, maintain and provide access to cultural heritage resources. Sometimes the concept of 'galleries' is excluded to ensure that the focus is limited to non-commercial collections (thus the acronym LAM), and sometimes the term is expanded to GLAMR to include the field of records management. For many years there has been discussion in the professional literature about GLAM convergence (Warren &

Matthews, 2018a, 2018b) which examines the ideas relating to "shared programming, collaborative creation or management of digital collections, and the sharing or integration of facilities" (Kennan & Lymn, 2019, p.237). A number of studies have examined the discrete and common skills that may be determined by the different workforce contexts within the GLAM sector. While the areas of commonality have been summarised as the "knowledge and skills for information organisation and management, legal and ethical matters associated with the mission of institutions, such as disability access and copyright, data skills, such as visualisation and preservation, and content design and production" (Hider & Carroll, 2018, p.8), it is acknowledged that there will still be domain-specific skills requirements, based on the distinctive traditions and user expectations that have developed over time across the different types of institution.

An investigation into the current and future knowledge and skills required by information professionals working in GLAM institutions was conducted by Howard (2015), with the primary focus being on the information management competencies used when working with cultural heritage materials. The research findings distilled from the data collected through a series of focus groups conducted with participants from the four different sectors (galleries, libraries, archives and museums) are of interest: 25 knowledge concepts were identified, along with 15 generic skills (Howard et al., 2016). Knowledge concepts include:

- Sectoral and institutional awareness
    - Information about the sector
    - Theories and philosophies as they pertain to the sector (e.g. archival theory)
    - The role of the institution within the community
- Users
    - Knowing who the audience or users are
    - User needs
    - User behaviour
    - Accessibility issues, including disability access
    - Customer service, including cultural awareness
- Information services
    - Information retrieval
    - Reference services
- Information organisation and management
    - Information architecture principles
    - Purpose and application of metadata, taxonomies, thesauri & other cataloguing tools
- Collections
    - Collection development
    - Collection management
    - Requirements of physical and digital collections
    - Cultural awareness, e.g. access to indigenous materials
    - Preservation
- Governance and standards
    - Policies and procedures for information organisations
    - International, national and local standards
- Technology
    - Design, implementation and evaluation of information systems
    - Use and apply technologies to capture, store, preserve, migrate and dispose
    - Digitisation
    - Languages, e.g. xml, html, Java etc

- Legal and ethical issues
  - Intellectual property, copyright, creative commons, information security, freedom of information
  - Ethics and codes of conduct.

The generic, or transferable, skills encompass:

- Information technology skills
- Project management
- Marketing
- Financial skills
- Research skills (finding, analysing, evaluating, citing information)
- Human resources
- Leadership
- Teamwork or team focus
- Customer service focus
- Professional ethics and social responsibility
- Self-management
- Communication
- Problem solving
- Critical thinking
- Commitment to lifelong learning.

Looking to the future, the ever-evolving digital environment would demand higher level skills in the areas of digital preservation and digital curation; at the same time, generalist capabilities such as communication skills, teamwork skills and information technology skills would become increasingly important (Howard et al., 2016).

The Salzburg Curriculum (2011)

In late 2011, the Salzburg Global Seminar (SGS) and the Institute of Museum and Library Studies (IMLS) sponsored an event where library and museum professionals from 31 countries came together to consider the development of a framework that could underpin a unified library and museum curriculum. The objective for the meeting was founded on the premise that common skillsets were needed to deliver collections and services "in a connected and participatory world" (The Salzburg Curriculum, 2011a). A participatory culture has been defined as "a culture with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing one's creations, and some type of informal mentorship whereby what is known is passed along to novices" (Jenkins et al., 2006, p.3). These ideas resonate with the concepts of the Creative Library and the Community Library presented in the *VPL 2030* planning document (SLV, 2013) (see 3.1 of this report).

Participants at the forum considered the concepts, knowledge, skills and processes that library professionals and museum professionals would all need as they looked beyond their collections to engage with their communities. The Salzburg Curriculum therefore focuses on the skills required by information professionals who want to make a positive difference in their communities, particularly as facilitators of conversations that seek "to improve society through knowledge exchange and social action" (Lankes, 2016, p.75).

The resulting high-level competency framework was designed to meet the curricular needs of entry-level degree programs, as well as inform professional learning activities for library staff. A set of core values underpins the framework (The Salzburg Curriculum, 2011b):

- Openness and transparency
- Self-reflection
- Collaboration
- Service
- Empathy and respect
- Continuous learning/striving for excellence (which requires lifelong learning)
- Creativity and imagination (to be able to develop new ideas and adapt to new circumstances.

The framework brings together six curricular topics, each of which includes a number of skillsets required by library and museum professionals (Table 28), with brief descriptors provided (The Salzburg Curriculum, 2011c).

Table 28: The Salzburg Curriculum (2011c)

Topics	Skills
Transformative social engagement	- Activism and advocacy - Social responsibility - Critical social analysis - Public programming - Sustainability of societal mission - Conflict management - Understanding community needs
Technology	- Crowdsourcing/outreach - Ability to engage and evolve with technology - Ability to impart technology skills to community across generations - Creating and maintaining an effective virtual presence
Management for participation	- Institutional sustainability - Advocacy for institution - Economics (finances and budgeting) - Ethics and values (see the core values for Framing) - Sharing: benefits and barriers - Collaborate: with peers & within interdisciplinary teams - Assessment/analytics/impact
Asset management	- Preserve/safeguard - Collect - Organise
Cultural skills	- Communication - Intercultural: the ability to analyze and function in micro- and macro-cultures, including age and gender - Languages/terminology (associated with various groups in the community) - Support for multiple types of literacies

Topics	Skills
Knowledge, learning and innovation	• Knowledge is constructed • Improvisation or innovation • Interpretation (of objects/pieces of information) • Dissemination • Information seeking

A series of videos presented by R. David Lankes, with accompanying transcripts, provides the narrative explanation of and the rationale for the underlying characteristics of all the skillsets, highlighting the importance of deepening the understanding of cultural, economic and social diversity in the community, creating innovative partnerships with other community organisations, and leveraging the value of technology as a tool to build collaborative relationships (Lankes et al., 2015).

Findings from the research project *Re-conceptualising and re-positioning Australian library and information science education for the 21st century* (Partridge et al., 2011) highlighted the convergence of skills requirements across the different professional fields. A review of library job advertisements established that archival skills were sought for some positions in academic and public libraries, while records management skills were needed for school library and special library roles. It was noted that there was "a demand for graduates with a knowledge base that spans the major collecting areas of libraries, archives and records" (Partridge et al., 2011, p.62).

Over the years, some LIS education programs in this country endeavoured to address these issues through a multi-disciplinary approach to course offerings. However, LIS educators reported that they found it disconcerting to have multiple professional associations involved in course accreditation, e.g. ALIA, ASA and RIMPA, arguing that they faced significant challenges "to adequately meet the individual and highly specific needs of the different associations" (Hallam, 2013, p.51). Accordingly, there was strong interest in the potential for coordinated accreditation activities across the broader information environment. In 2014-2015, ALIA partnered with ASA and RIMPA to develop a new policy document, *Foundation knowledge, skills and attributes for information professionals working in archives, libraries and records management*, which articulated the convergence of skillsets and could be used as the foundation for joint accreditation processes. The policy was reviewed in 2020 (ALIA, 2020f).

Foundation knowledge, skills and attributes relevant to information professionals working in archives, libraries and records management (ALIA, 2020)

The *Foundation knowledge, skills and attributes* policy (ALIA, 2020f) presents the national professional standards for the joint accreditation of entry-level courses in archival, library and records management studies. Four Australian universities currently offer joint ALIA/ASA/RIMPA accredited programs: Charles Sturt University, Curtin University, Monash University and University of South Australia.

The knowledge and skills framework has four core elements, each with a number of skillets. The focus is clearly on the practical dimensions of the information lifecycle, including contexts, purposes, processes and practices, and products and services, presented in a neutral way so that the information management concepts may be appropriately interpreted and applied by librarians, archivists or records managers (Table 29).

Table 29: *Foundation knowledge, skills and attributes for information professionals working in archives, libraries and records management* (ALIA, 2020f)

Knowledge area	Skillset
Knowledge of the broad context of the information environment	- The historic context, theories and principles of information management - The current and changing contexts in which information is originated, described, stored, organised, retrieved, disseminated, modified and used - How information can be analysed and interpreted by professionals and users - The relevant ethical, legal and policy issues, including privacy and copyright - Potential partnerships and alliances with other stakeholders - How the role aligns with government, corporate, social and cultural goals and values - Respectfully acknowledge, learn about and understand the important contribution of our first peoples
The purposes and characteristics of information architecture, organisation and access	- Understand the underpinning theory and practice of information management - Source, capture, manage and preserve records and collections, to create an information environment that has integrity and is accessible, reliable, compliant, comprehensive - Understand the importance of information technology, architecture and methodologies to determine the structure, design and flows of information - Analyse information flow and user needs to develop systems and interfaces that adhere to recognised usability and accessibility guidelines - Understand information administration, migration, retrieval, restructuring, manipulation and presentation - Work collaboratively with information technology service providers
Processes and practices relating to information management	- Identify user requirements and the processes that will meet them, including designing, implementing and evaluating systems and tolls, introducing enabling technologies, developing and applying metadata - Enable information access and use through systematic and user-centred description, categorisation, digitisation, storage, preservation and retrieval - Manage and preserve records and information over time in accordance with organisation and community policies, as new theories, principles, practice and technologies emerge - Provide and promote free (where appropriate) and equitable access to information and services - Provide users services, reference and outreach programs to support accessibility in multiple environments - Facilitate the acquisition, licensing or creation of information in a range of media and formats

Knowledge area	Skillset
	• Create accurate and standards-driven metadata for enhanced and persistent access to resources in an online environment • Document the context within which information lies – past, present and future; cultural perspectives; legislative and regulatory mandates; ownership and governance • Appraise and assess the significance of records and collections; establish priorities and implement decisions about their use, retention and disposal • Identify vital records and information as part of business continuity and disaster management planning
Information sources, products and services	• Understand and explore how information is effectively sought and utilised • Assess the value and effectiveness of methodologies, facilities, products and services • Support the organisation to respond to digital transformation • Identify and investigate information needs and information behaviours of individuals, communities, organisations and businesses through creation, collaboration and partnerships • Design and deliver customised information services and products • Identify and evaluate information sources, services and products to determine their relevance to the needs of users • Use research skills to provide appropriate information to users • Turn information into knowledge • Understand the needs for information skills in the population, facilitate the development of information literacy and the ability for critical evaluation, and deliver information literacy education for users • Market information services and products

Although the ALIA/ASA/RIMPA policy document was prepared for the purposes of course accreditation, readers are advised that the general employability skills that are listed may not necessarily be relevant to people commencing their career. It is assumed that these capabilities would develop over time, and that "an experienced or senior practitioner working in a specialist or leadership role" would demonstrate the skills (Table 30).

Table 30: General employability skills (ALIA, 2020f)

Business analysis and audit	Financial and budgetary management	Problem solving
Communication and interpersonal skills	Human resource management	Project management
Critical, reflective and creative thinking	ICT application	Research methods
Customer service	Information and statistical analysis	Risk assessment
Development of governance and information frameworks	Leadership and mentoring capabilities	Self-direction and management
Digital literacy to manage and use multiple technologies	Marketing	Supervisory
Ethical standards and social responsibility	Partnership and alliance-building	Training and development

Some skills, e.g. the development of governance and information frameworks, research methods or project management, could arguably be considered professional skills, while other skills may be grouped as management and leadership skills in other competency frameworks, e.g. financial and budgetary management, human resource management, risk management etc. Other skills are undoubtedly personal and interpersonal capabilities, e.g. self-direction and management, critical, reflective and creative thinking, communication and interpersonal skills, and customer service.

The ability to recognise the value of information skills is included as a skillset in the knowledge area of Information sources, services and products: "Understand the needs for information skills in the population, facilitate the development of information literacy and the ability for critical evaluation, and deliver information literacy education for users" (ALIA, 2020f, pp.2-3). In ALIA's LIS-focused policy document, *Foundation knowledge for entry-level library and information professionals* (ALIA, 2020e), the topic of information literacy is included in the field of Literacies and learning, with a more detailed interest in training needs analysis, instructional methodologies, including technology enhanced learning, and advocacy.

In the joint ALIA/ASA/RIMPA policy, the concept of 'training and development' is listed amongst the general employability skills, but it is not immediately clear whether this skillset refers to meeting the information professionals' own training and development needs, or to their capabilities to conduct training and development with staff and/or users. However, as the policy document concludes with the statement that all three associations (ALIA, ASA and RIMPA) encourage members "to undertake continuous professional development to ensure that their skills and knowledge remain current" (ALIA, 2020f, p.4), it would appear that 'training and development' should be interpreted as the capabilities to deliver training to others. The topics are examined in closer detail under the headings of Archives and Records and information management.

Archives

During the first decade of the 21st century, a number of European countries undertook an exercise to define the competencies of archivists. The wide range of skills frameworks that resulted caused concern; to resolve the difficulties, collaborative efforts were made by the International Council for Archives (ICA) section for professional associations (ICA/SPA) and the European branch of ICA (EURBICA) to develop a common competency framework for Europe. However, the project team found that "it would have been very difficult, possibly impossible, to develop a single model for Europe, taking into account the different traditions and working environments" (Martinez & Whatley, 2011, p.74). The alternative strategy, therefore, was to draft a handbook on how to develop a competency framework that would be appropriate for the given context, the immediate archival heritage and the local standards. The handbook (ICA, 2011) includes detailed discussion on the importance of the *professional* profile, which considers the archivist's role in society and their responsibilities in an organisation, and the *competency* profile, which outlines the relevant knowledge, skills and aptitudes required to fulfill the responsibilities. Formal education pathways, continuing professional development, and professional certification of archivists are also considered, with the associated foci of theoretical knowledge and practical skills. In the handbook, the competency framework template is supported by several case studies to illustrate its use. It is argued that archives and records managers need to be prepared to meet the challenges of the digital era, and that an understanding of the appropriate skills and competencies is required to maintain high standards of professionalism. The handbook is only available to members of the ICA.

Beyond this international initiative, there have been a number of national initiatives to create competency frameworks for archivists: here in Australia, in the UK, the US and Canada.

Australia

In Australia, National Archives of Australia (NAA) not only serves as the country's premier collections agency, but also "provides leadership and support to Australian Government employees working in information management" (NAA, n.d.-a). This aspect of NAA activity is discussed later in this section, under the heading Records and information management.

In the context of professional education, prior to the introduction of the joint accreditation arrangements of ALIA, ASA and RIMPA, the ASA managed the process for accrediting archival studies courses on its own. The ASA retains responsibility for the accreditation of archival studies courses as part of the joint accreditation; details of the accredited programs are presented on the ASA website (ASA, 2021b). The association's Accreditation and Professional Training Committee has oversight over the ASA's accreditation activities, as well managing the professional body of knowledge, referred to as the *ASA Professional capabilities* (ASA, 2021a). The *Professional capabilities* framework comprises one area of professional knowledge and skills, which is mandatory, plus six additional capabilities (Table 31).

Table 31: *ASA Professional capabilities* (ASA, 2021a)

Capability	Scope
Knowledge & skills	Understand archival principles and recordkeeping practices, Continuum Theory, Australian Series System, metadata standards and the legal framework for practice. Apply this knowledge across business analysis, system development, digital continuity practices, appraisal, disposal, arrangement and description.
Professionalism	Demonstrate professional commitment by taking responsibility for individual conduct, practice and learning, with support through mentoring. Safeguard the profession's reputation and be accountable for professional standards.
Rights, justice & the law	Understand the role of records in a civil society; uphold access and privacy principles and recognise the fundamental principles of human rights, inclusion and equality. Ensure these principles underpin practice.
Value & ethics	Demonstrate ethical conduct and engage in ethical decision-making to develop trust, including through partnership with people who use our services. Be knowledgeable about the value base of the profession, its ethical standards and relevant law.
Context & organisations	Develop enterprise-wide knowledge and understanding of business processes, IT infrastructure and systems; and the resulting creation, requirements and use of records. Similarly develop a contextualised understanding of individuals in relation to personal records.
Leadership & innovation	Support the evolution of the profession and best practice through active engagement, research, mentoring, teaching and management.
Critical reflection	Apply the principles of critical thinking and reasoned discernment to identify, distinguish, evaluate and integrate organisational requirements, information systems, business processes and evidential requirements.

Each capability has a number of measurable competencies, as illustrated by the topic of Rights, justice and the law:

- Demonstrate ability to interpret and apply legislation to recordkeeping practice, identifying and transparently resolving situations where wider societal or business expectations may challenge the legislation
- Monitor, review and evaluate practice to ensure application of the principles of social justice, social inclusion and equality in decision-making
- Contribute to policies and development opportunities to support these principles
- Be able to communicate legislative issues to other professionals and agencies.

The ASA *Professional capability matrix* (ASA, 2017) presents further information about the progressive levels of capability that may be expected at different career stages, e.g. new graduates, professionals with around two years' experience, and advanced professionals.

Interestingly, the ASA website still provides access to two older documents published jointly by the ASA and Records Management Association of Australasia (RMAA), the forerunner of Records and Information Management Professionals of Australasia (RIMPA):

- *Statement of knowledge for recordkeeping professionals* (ASA & RMAA, 2006)
- *Tasks, competencies and salaries for recordkeeping professionals* (ASA & RMAA, 2010).

The *Statement of knowledge*, reviewed in 2019, is also available on the RIMPA website (RIMPA, 2019). Conceptually, the knowledge domains presented in the *Statement of knowledge* are reflected in the ALIA/ASA/RIMPA *Foundation knowledge, skills and attributes relevant to information professionals working in archives, libraries and records management* policy document (ALIA, 2020f). The *Tasks, competencies and salaries* document presents the typical tasks, with relevant competency levels, performed by staff employed at Band 1 – Band 6, aligning them with the qualifications ranging from VET Certificate III through to a university master's degree with a specialisation in recordkeeping subjects.

United Kingdom

The Archives and Records Association (ARA) is the principal professional body for archivists, archive conservators and records managers in the UK and Ireland (ARA, 2016). ARA's activities include providing guidance and advice about careers and employment in the field. Two areas are of interest to the current study: the ARA competency framework which underpins the association's professional recognition program, and the recommended content for postgraduate courses in archives and records management.

The *ARA Competency framework summary* (ARA, 2017) presents a succinct list of competencies grouped into three areas of practice: Organisational, Process, and Stakeholder/customer. The relevant functional activities, further broken down into specific competencies, are presented for each area (Table 32).

Table 32: *ARA Competency framework summary* (ARA, 2017)

Area	Function	Competency
A. Organisational	Governance, leadership and management	1. Working with aims and objectives 2. Developing and using policies and procedures 3. Managing and using financial and other resources 4. Working with people
	Compliance, monitoring and performance	5. Understanding, interpreting and complying with legislation and/or regulation 6. Managing risk and/or business continuity 7. Managing performance and impact
	Personal and professional development	8. Contributing to/understanding internal/external professional environments 9. Developing self and others 10. Applying ethics and standards 11. Developing specialist knowledge and skills

Area	Function	Competency
B. Process	Processing/managing records in all media and formats	1. Using and managing information systems, records, data 2. Creating and/or capturing and maintaining records 3. Organising and describing records 4. Appraising and disposing or records 5. Providing intellectual and physical access to records
	Processing/managing archives in all media and formats	6. Archival collections management 7. Acquiring and accessioning of archives 8. Appraisal, retention, selection and disposal of archives 9. Arranging, cataloguing and/or describing archives 10. Providing intellectual and physical access to, and retrieval of, archives
	Preserving archives and records in all media and formats	11. Preservation management: understanding and assessing needs 12. Undertaking and managing processes related to buildings, environments, security, storage, package, handling and use 13. Emergency and business continuity planning: prevention, reaction and recovery 14. Digital curation: preserving born-digital and digitised records and archives
	Conserving archives and records	15. Assessing the stability and condition of archives and records 16. Identifying and evaluating conservation options and strategies 17. Applying interventive conservation measures to archives and records 18. Developing specialist knowledge and skills
C. Stakeholder/customer	Understanding users/stakeholders	1. Identifying and developing policies for supporting internal and external users/community groups 2. Planning and delivering activities to meet the requirements of internal and external users/stakeholders 3. Meeting the special needs (physical/intellectual) of individuals/groups
	Service delivery	4. Promoting and providing facilities for access appropriate to the nature of information held 5. Providing access to the content of records and archives

Area	Function	Competency
	Engagement	6. Learning and development: providing opportunities for users and stakeholders 7. Developing and sustaining local/virtual user and community networks 8. Encouraging user and community engagement with service evaluation 9. Undertaking marketing, advocacy and outreach 10. Developing specialist knowledge and skills

The *ARA Competency framework summary* (ARA, 2017) includes the competency of digital curation to ensure the preservation of born-digital and digitised records and archives, as well as using and managing information systems, records and data. Higgins (2017) argued that, as digital information is now ubiquitous in the information professional's workplace, increased professional attention should be paid to the field of digital curation. This topic is examined in greater detail in section 4.2.

United States

In the US, the Society of American Archivists (SAA) has published a set of *Guidelines for a graduate program in archival studies (GPAS)* (SAA, 2016a). The *Guidelines* state that courses should offer "a strong graduate-level archival education based on core archival knowledge complemented by knowledge drawn from other disciplines such as anthropology, economics, education, history, law, library and information science, management, museum studies, and sociology" (SAA, 2016b). While the SAA acknowledges that there is a role for interdisciplinary studies, such as those that link archival, library and museum knowledge, a specialised archival education program needs to focus on the core knowledge of the discipline. A clear distinction is made between graduate education, which is both academic and professional, and archival training, which focuses on acquiring practical knowledge or building skills. The importance of a professional discipline is described as "a lifelong undertaking, involving questioning accepted ideas and methods, revising received wisdom, and developing professional standards" (SAA, 2016b). SAA recommends that the curriculum should include core archival knowledge, including (SAA, 2016c):

- Knowledge of archival material and functions
  - The nature of records and archives
  - Selection, appraisal, and acquisition
  - Arrangement and description
  - Preservation
  - Reference and access
  - Outreach, instruction, and advocacy
  - Management and administration
  - Records and information management
  - Digital materials management
- Knowledge of the profession
  - History of archives and the archives profession
  - Records and cultural memory
  - Ethics and values

- Contextual knowledge
  - Social and cultural systems
  - Legal and financial systems
- Complementary knowledge
  - Information technology
  - Conservation
  - Research design and execution
  - Organizational theory
  - Library and information science
  - Liberal arts and sciences
  - Allied professions (library and information science, museum studies, oral history, public history, social and community organizations).

It was interesting to discover the wide availability of courses for potential archivists: a total of 64 academic institutions in the US and four in Canada are currently listed on the SAA website as education providers. It is noted that the SAA does not accredit or endorse any courses in the directory, but the *Guidelines* offer the opportunity to ensure a strong, common foundation for archival education.

Canada

To date, Canadian archivists do not have a national competency framework. However, the *Guidelines for a graduate program in archival studies* (SAA, 2016a) were endorsed by the Education Committee of the Association of Canadian Archivists (ACA) in 2019 "as an interim measure until the Education Committee writes its own thorough educational guidelines" (Daniel et al., 2020, p.3). The need for archivists to keep pace with the evolving professional environment (Royal Society of Canada, 2014) and the value of identifying the required competencies for people working in memory institutions in the digital age (Council of Canadian Academies, 2015) have been acknowledged, but these needs have not been translated into "a fulsome competency framework" (Daniel et al., 2020, p.5). The lack of standardised education in North America is seen as challenge, but "a competency framework is one tool that could serve for consistency among educational institutions" (Daniel et al., 2020, p.6) and help "shape our professional identity as it helps define who we are as a profession and our role and work activities" (Daniel et al., 2020, p.7).

Work on the development of a preliminary competency framework for Canadian archivists was informed a number of key sources:

- *Competencies for information specialists in emerging roles* (Fraser-Arnott, 2017)
- *Sources relating to archival and recordkeeping competency and certification and accreditation programs* (ICA, 2007) [updated 2013]
- *Competencies for archivists and records managers* (ACA, 2014)
- *Role delineation statement for professional archivists* (ACA, 2014)
- *ARA Competency framework summary* (ARA, 2017)
- *ASA Professional capabilities framework* (ASA, 2017).

The collective competencies presented in the four frameworks (ACA, 2014; Academy of Certified Archivists, 2014; ASA, 2017; ARA, 2017) were reviewed, coded and de-duplicated. The researchers found that while there were variations in structure and levels of interpretation, "it was evident that the competency frameworks were not fundamentally different from each other" (Daniel et al., 2020, p.9).

This analysis resulted in a framework with ten functional areas with a total of 34 competencies (Table 33). It is described as a generalist framework, i.e. with relevance for all levels of responsibility or function, as well as suitable for interpretation in different contexts and flexible to accommodate changes in the work environment (Table 33).

Table 33: Preliminary competency framework (Daniel et al., 2020)

Functional area	Competency
Access and discovery	1. Providing intellectual and physical access to, and retrieval of, records 2. Providing reference services based on archival holdings and on user needs 3. Applying the principles of arrangement and description 4. Understanding and applying descriptive and metadata standards 5. Analyzing holdings use and user requests for planning and prioritizing
Collections care	1. Understanding the impact of obsolescence and degradation on archival materials 2. Applying preservation and conservation measures to archival materials in all formats 3. Establishing and maintaining disaster preparedness and recovery and risk management policies and procedures 4. Ensuring environmental conditions, storage and handling of records
Collections development	1. Building and maintaining donor relationships 2. Understanding the relationship between the archival repository mandate and the acquisition policy 3. Understanding how the acquisition policy guides the selection, appraisal, acquisition, accession and deposition of records 4. Appraising records based on evidential, informational, administrative, legal, fiscal and intrinsic values 5. Understanding the principles of records management, record keeping systems and practices, and the lifecycle of the records
Fundamentals and principles	1. Understanding and applying the principles of provenance and original order 2. Understanding characteristics of records such as trustworthiness, authenticity, reliability, usability. Comprehensiveness, uniqueness, and quality (integrity of the records) 3. Understanding archival value (evidential, informational, administrative, legal, fiscal and intrinsic) 4. Establishing and maintaining physical and intellectual control of records

Functional area	Competency
Governance	1. Managing human and financial resources 2. Establishing policies and procedures for the archival program 3. Identifying partnerships and fostering relationships to support collaboration 4. Assessing the impact of services and activities 5. Participating in strategic and operational planning
Information systems	1. Designing, implementing, evaluating and maintaining the information technology used to manage archives 2. Awareness and understanding of evolving technology and its impact on archives
Legislation	1. Understanding of legislation and ethical practices, including privacy, confidentiality, copyright, and freedom of information relating to all aspects of archival work 2. Understanding of legislation and ethical practices relating to gifts, loans, and deposits
Outreach and advocacy	1. Promoting archives through educational programs, events, press releases, websites, social media, exhibits, and marketing materials 2. Developing and sustaining community networks across heritage and cultural sectors
Standards, service, scholarship (stewardship)	1. Commitment to professional development, such as attending conferences, reading literature, participating in continuing education, and engaging and contributing to scholarship 2. Accountability to professional codes of ethics and codes of conduct 3. Commitment to the profession through participation in service activities
User experience	1. Evaluating the information needs of user groups 2. Designing services to meet the information needs of user groups

The researchers have endeavoured to consider the balance between the focus on collections and users, as well as the range of professional and administrative tasks to include both customer-focused and back of house responsibilities. It is noted that no one person should need to be an expert in all areas of activity.

Despite being the most recent of the competency frameworks for archivists discussed in this section, the development team reported that their research was restricted to the four existing frameworks, and that they did not introduce any new areas of knowledge and skills that were not already presented. The incorporation of two additional topics was proposed: firstly, regional-specific topics (e.g. Canadian-developed practices and standards, Indigenous recordkeeping practices) and secondly, the area of emotional labour as an element of professional practice. Emotional labour is described as the ways in which archival practitioners manage their feelings in a service-oriented workplace.

Records and information management

At the international level, the SFIA Foundation, an international not-for-profit organisation which is a collaborative effort from IT professionals, educationalists and HR managers from around the world, has developed and managed the *Skills framework for the information age* (SFIA). This is referred to as "the global skills and competency framework for the digital age" (SFIA Foundation, 2021a), outlining the skillsets required by information professionals who are involved in the design, development, implementation, management and protection of digital technologies and data. This expansive range of responsibilities naturally covers many sub-disciplines of the ICT profession, evidenced by the diverse skills profiles presented in the framework to reflect the skills required for different roles or jobs.

One skills profile covers information management (IM) roles, i.e. people responsible for planning, implementing and controlling the full life cycle management of digitally organised information and records. The description of this area of practice states (SFIA Foundation, 2021b):

> Information and records are held in many forms including – but not limited to – digital documents, printed material, microform, e-mail, chats and websites. Information may be structured or unstructured and may be created by internal or external sources.

> Specific laws and regulations may require organisations to maintain records of certain business activities and transactions for a minimum period.

> Activities may include – but are not limited to:
> - Identifying, classifying, valuing, processing, storing, archiving, destroying information and records
> - Governance of how information is used to support decision-making, business processes and digital services
> - Developing and promoting strategies and policies for the design of information architectures, structures and taxonomies
> - Capturing and maintaining evidence of and information about business activities and transactions in the form of records
> - Implementing systems of cataloguing, metadata, indexing, and classification standards and methods used to organise recorded information
> - Ensuring compliance with legal obligations.

The information skills profile presents several different levels of responsibility, autonomy, complexity and discipline knowledge expected of an individual in terms of competency, experience and seniority in an organisation. These levels are further characterised by generic attributes which describe behavioural factors, including (SFIA Foundation, 2021c):

- Collaboration
- Communication
- Creativity
- Decision making
- Execution performance
- Influence
- Leadership
- Learning and professional development
- Planning
- Problem solving
- Security, privacy and ethics.

The Australian Government's Digital Transformation Agency (DTA) has subscribed to a country-wide licence to make the SFIA resources available to all Australian organisations (Australian Public Service Commission (APSC), 2021a; DTA, 2021; Digital Profession, 2021).

Australia

Here in Australia, the SFIA framework feeds into the Australian Public Service (APS) *Digital career pathways resource* (DTA, n.d.-a), with the skills mapped to the *APS Job families* framework. The APS job family for Information and Knowledge Management includes the job functions of Librarian, as well as Information Governance and Knowledge. The scope of Information Governance and Knowledge covers three areas of practice: Curator/Archivist/Conservator; Data/Information Management Officer; Records Management Officer or Manager (DTA, n.d.-b). In the documentation, the APS datasets are correlated with the Australian and New Zealand Standard Classification of Occupations (ANZSCO) datasets that represent the roles of Librarian, Archivist, Information and Organisation Professionals, and Records Manager (APSC, 2021b). Although the information is primarily of relevance for workforce planning activities within the government, the linkages to the ANZSCO categories allow for a comparative analysis to be made between the public service staff and those employed in the wider business and academic sectors.

As noted earlier, National Archives of Australia (NAA) is responsible for providing "leadership and support to Australian Government employees working in information management" (NAA, n.d.-a). The agency serves as the standards body, managing business information standards such as the *Information standard for Australian Government*, the *Australian Government recordkeeping metadata standard* and the *Australian Government Legal Service metadata standard* (NAA, n.d.-b). NAA is a strong advocate for the effective management of information and for the development of the relevant skills and capabilities in the workforce. A general capability framework for all staff has been developed: this includes a basic understanding of areas such as information and data management, legislation and policy, data literacy, business process analysis and user experience (NAA, n.d.-c). There is also a more specialised framework for IM specialists, *Capabilities for information management professionals* (NAA, n.d.-d), as well as a further grouping of capabilities which relates to "additional data-centric skills and knowledge for information management professionals" (NAA, n.d.-d). This data management framework is discussed in section 4.3 of this report.

The framework for IM professionals presents 18 areas of knowledge and skills:

- Information governance
- Legislation and policy
- Standards and best practice
- Information and data leadership
- Value of data and information
- Risk management
- Information security
- Value identification, retention and destruction
- Digital preservation and continuity
- Business process improvement
- Information review
- User experience

- Information architecture
- Metadata
- Tools and technologies
- Information management functionality in systems
- Interoperability
- Cloud computing.

Each of the capabilities is mapped to a four-level maturity schema: Foundation, Practitioner/skilled operational, Management/specialist, and Executive/lead. The capability of Information governance is expanded as an example of expectations for IM staff at these four levels (NAA, n.d.-d):

- Foundation
    - Is aware of relevant organisational policies, frameworks and procedures
    - Understands that information and data need to be managed within a framework that supports business goals
- Practitioner/skilled operational
    - Understands the role of information governance and is able to apply appropriate frameworks, strategies and policies in the organisation
    - Is able to conduct compliance monitoring and reporting activities for systems and practices
- Management/specialist
    - Is able to establish links between information, data and IT governance
    - Is able to develop and implement information governance frameworks, strategies and policies
    - Is able to plan and manage compliance monitoring and reporting activities
- Executive/lead
    - Is able to endorse strategies to ensure information governance is integrated with data and IT governance, and aligns with corporate governance
    - Is able to advocate for information governance to ensure reduced risk and improved information sharing and reuse
    - Is able to advocate for, or chair, an information governance committee (or equivalent) and ensure key stakeholders are engaged.

The topic of information governance is explored in greater detail in section 2.3 of the report.

In the Australasian region, the interests of professionals working in the field of information and records management are advanced by Records and Information Managers Australasia (RIMPA). As already noted (section 3.3.6), information and records management courses in Australia are jointly accredited by ALIA, ASA and RIMPA. Beyond this, however, academic curricula are also evaluated against the criteria listed in the association's *Statement of knowledge for recordkeeping professionals* (RIMPA, 2019), plus the relevant international and national standards for records management. The website indicates that, at the higher education level, there are currently five RIMPA-accredited institutions offering postgraduate diplomas and master's degrees in Australia and two in New Zealand (RIMPA, 2021b).

The fundamental knowledge base for all recordkeeping professionals is defined as an understanding of three knowledge domains (RIMPA, 2019, p.3):

- The purposes and characteristics of records and recordkeeping systems
- The context in which recordkeeping occurs
- Recordkeeping processes and practices.

The three integrated concepts of theory, practice and ethics underpin the professional field. The *Statement of knowledge* has also been ratified by ASA (RIMPA, 2019, p.1) and, as noted earlier, the ASA website also provides access to a more detailed document, *Tasks, competencies and salaries for recordkeeping professionals* (ASA & RMAA, 2010).

United Kingdom

The *Competency framework* developed by Archives and Records Association for the UK and Ireland (ARA, 2017) and the associated curriculum guidance for the combined field of archives and records management (ARA, 2018) have been discussed earlier in this section in the context of competency frameworks for archivists. In the *Competency framework* it is stated that the document should be "the first place record keepers should refer to when thinking about their own career and professional development" (ARA, 2017). Additionally, the curriculum requirements for more specialised records management programs are outlined (ARA, 2018, pp.16-19). The domains of study are the same for both curricula (i.e. combined archives and records management, and specialised records management):

- Recordkeeping: theory and principles
- Recordkeeping: systems and processes
- Curation and stewardship
- Access, advocacy and stakeholders.

However, the core outcomes for the two curricula differ, with greater depth of knowledge and understanding expected for graduates who have specialised in records management. In the area of the theory and principles of recordkeeping, for example, greater emphasis is placed on the field records management within the wider information and technology contexts (ARA, 2018, p.16):

- Where records management fits in the information management spectrum and the relationship between records management and related disciplines including archives administration, information/knowledge management, information technology, information security, risk management, litigation support and compliance management
- The application of the theory and principles of records management to the fast-changing information environment, including the challenges of technology and its obsolescence, change management and new ways of working.

The Information and Records Management Society (IRMS) is another professional body in the UK which supports information professionals and students involved in fields such as information governance, records management, data protection and information security (IRMS, n.d.-a). The IRMS offers members the opportunity to attain professional status through accreditation (IRMS, n.d.-b). While there is no formal competency framework, the accreditation process requires applicants to present evidence of their expertise in specific areas (IRMS, 2017, pp.10-11):

- Information and records management
- Information governance
- A related discipline (e.g. business intelligence, information security).

IRMS emphasises that accreditation is not limited to members holding a degree in records management and encourages those with diverse backgrounds in the sub-disciplines of the information professions to apply.

United States

There are also two professional bodies in the US whose members are drawn from the information management and records fields: ARMA International and the Association for Intelligent Information Management (AIIM) (AIIM, 2021a). ARMA International was originally known as the Association for Records Managers and Administrators, but as the field of records management grew and expanded to encompass information governance, the organisation adopted the new name of ARMA International (ARMA International, 2021a). Information governance has been described as "the strategic framework composed of standards, processes, roles and metrics that hold organisations and individuals accountable to create, organise, secure, maintain, use and dispose of information in ways that align with and contribute to the organisation's goals" (Iron Mountain, 2021). In contrast, records management is described as the systematic management of records and information through their lifecycle, involving the analysis, design, implementation and management of manual and automated systems, based on software applications, securing records and data, executing policies, and retention.

One of ARMA's key publications is the *Records and information management core competencies* (ARMA International, 2017). The resource is described as a competency model which includes the knowledge, skills and characteristics required for high quality professional practice, with differentiation between four levels of competency, ranging from entry-level though to expert-level performance (ARMA International, 2017, p.1). There are six competency domains (Table 34).

Table 34. *Records and information management core competencies* (ARMA International, 2017)

Domains	Elements
Business functions	- Non-RIM functions, e.g. - Supervision - Budgeting - Customer service - Strategic planning - Work process mapping
Records & information management (RIM)/ information governance (IG) practices	- Systematically managing information assets: - Processing - Sharing - Using - Accessing - Organizing - Storing - Retrieving - Disposing - Support for decision making - Litigation support - Compliance with legislative, regulatory, contractual and audit requirements
Risk management	- Proactively mitigating and managing the potential for damage, loss or unauthorized access to information assets Risk analysis - Risk assessment

Domains	Elements
Communications and marketing	• Oral, written communication • Promotion and advocacy for RIM • User education and training • Building effective business relationships

Information technology	• Developing, maintaining and protecting information processing systems:
	   o Hardware and networks
	   o Software applications
	   o Data processing
	   o Collaboration sites
	   o Databases
	   o Mobile applications
	   o Information security

Leadership	• Commitment to increase RIM awareness
	• Motivating people toward the achievement of RIM program goals
	• Influencing others using leadership skills
	   o Mentoring
	   o Promoting continuing education and learning
	• Interpersonal skills
	   o Empathy and sensitivity
	   o Creative thinking
	• Change management skills
	   o Trust building
	   o Networking

The competency model then presents highly detailed information about the anticipated tasks that information professionals may perform, supported by an explanation of the underpinning knowledge and skills, all presented across the four levels of mastery.

AIIM has not published a formal competency framework, but states that the exam members take to become a AIIM Certified Information Professional is structured around five domains (AIIM, 2021b):

- Creating and capturing information
- Extracting intelligence from information
- Digitalizing information-intensive processes
- Automating governance and compliance
- Implementing an information management solution.

A comparison has been made between ARMA International and AIIM as professional associations to guide potential members about where the value might lie for them as IM professionals (Wilkins, 2020). It is stated that ARMA has historically focused on the knowledge and skills relevant to professional practice in records management, with an evolving interest in information governance. AIIM, on the other hand, has a more holistic focus on broad information management practices and the tools that support them. Research and education are important: "AIIM's educational content targets emerging information management issues and practices such as analytics and artificial intelligence, process automation, and managing structured and semi-structured data effectively" (Wilkins, 2020).

Summary

The employment landscape in the library, information, knowledge and data sectors is broad, deep and complex. To illustrate the variety of roles, CILIP presents the patchwork of career opportunities in a chart (Figure 3).
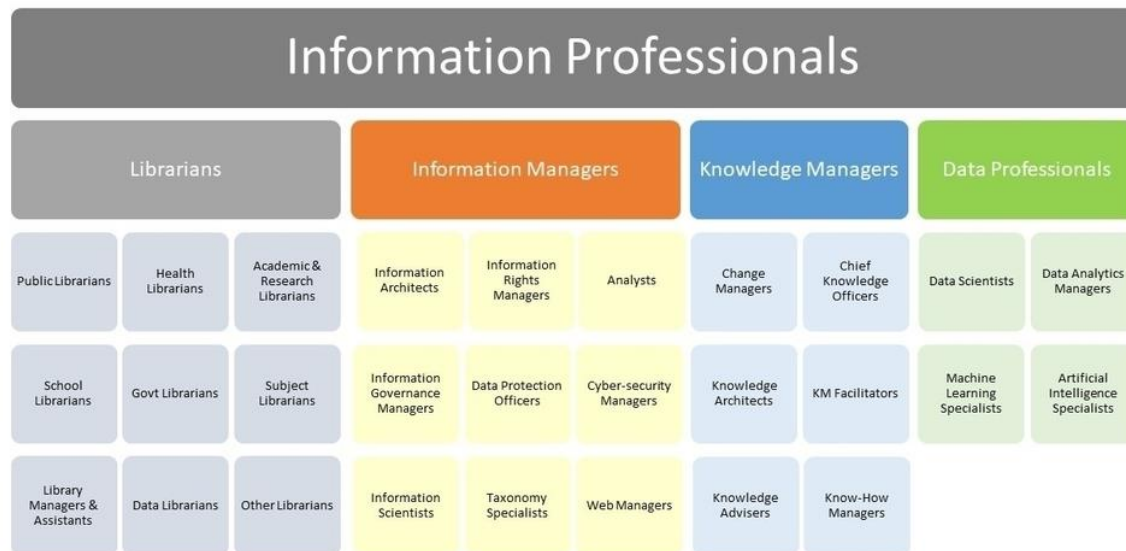
Figure 3: Chart presenting the range of Information Professional roles (CILIP, 2018b)

CILIP argues that the skillsets of information professionals are constantly evolving "in response to the changing needs of information users, changing formats and the changing contexts in which information, knowledge and data are used" (CILIP, 2018b, p.1). The diversity and adaptability of the library and information professional skillsets are viewed as a positive factor which can contribute the realisation of ALIA's vision for "a strong, diverse and future-ready workforce with contemporary skills that ensures the quality of library and information services" (ALIA, 2020d, p.1). The topic of future-focused skills will be discussed in the following chapter.

4.   Skills for future professional practice

The development of a skills framework demands a significant investment of professional expertise, time and other resources. It is critical that efforts are made to maintain the currency and usefulness of the framework, as the professional environment, the technical infrastructure and the language used within the sector can result in the need for new skills (Campion et al., 2011). Beyond this, however, there is the need to consider the nature of future-oriented skills which do not tend to be included in any frameworks. The changing information environment is monitored by some organisations, including IFLA and EDUCAUSE. IFLA's work on the *Trend report* (IFLA, 2019a) explores evolving social issues which are likely to impact on library and information services and discusses the topics of access to information, education, privacy, civic engagement and technological transformation. The EDUCAUSE *Horizon reports* (e.g. Alexander et al., 2019; Pelletier et al., 2021) and the joint initiative involving the Association of Research Libraries (ARL), the Coalition for Networked Information (CNI) and EDUCAUSE (Calvert, 2020; Calvert, 2021; Calvert & Kennedy, 2020; Lippincott, 2021) consider the emerging trends affecting academic and research libraries. In these contexts, perhaps not surprisingly, emphasis is placed on emerging technologies and data-intensive learning and research. The need to deal with uncertainty is a common theme, but the skills of library and information professionals to embrace technological developments and to engage with users, offer an optimistic perspective for the future (Calvert, 2021; IFLA, 2019a).

While extensive scoping work to identify key trends for skills and competencies has been undertaken by agencies such as Research Libraries UK (RLUK), Association of Research Libraries (ARL) and EDUCAUSE, an alternative research approach involves the analysis of job advertisements for positions in library and information services to identify current and emerging professional roles and the skills and attributes that employers are seeking (Dieckman, 2018; Gerolimos et al., 2015; Gibbons & Douglas, 2020; Maciel et al., 2018; Reeves & Hahn, 2010; Skene, 2017; Sproles & Clemons, 2019; Tokarz, 2019; Turner, 2020; Warren & Scoulas, 2020; Wilkinson, 2016; Zhang et al., 2021). Studies of this kind often indicate that the research findings could inform library school curricula and CPD offerings so that there would be a more comprehensive, structured approach to skills development.

Other approaches to identifying the skills required for future practice include the development of potential scenarios (Roy & Kennedy Hallmark, 2017) or conducting interviews and focus groups where participants are invited to consider the skillsets that they may need to support and achieve long-range organisational goals (Campion et al., 2011). These strategies were applied in the Victorian *Our Future, Our Skills* project (SLV, 2014b; SLV, 2020), with the two skills audits mapping the anticipated skillsets that staff would need to deliver programs and services in the Creative Library and Community Library scenarios introduced in the *VPL 2030* study (SLV, 2013). Both the Creative Library and the Community Library concepts are underpinned by innovation in the design and use of technologies (SLV, 2019). Although the ongoing development of new technologies presents library and information services with many opportunities, "librarians will be challenged to learn new skills to be able to implement the new technologies for learning, research and information" (Wenborn, 2018). Digital skills lie at the heart of the skills required for future professional practice (Maceli, 2018; Shahbazi et al., 2016; von Konsky et al., 2020).

This chapter of the report has been informed by the findings from the literature review and by discussions with professional colleagues. The notion of 'future skills' is multifaceted and multilayered, and inevitably will depend on the immediate area of employment and career stage. Nine future-focused skillsets were selected for review: there was a sense that these were not necessarily 'new' skillsets, but some long-practiced skills required "a 'change of focus' in the digital environment" (Howard, 2015, p.244). As the information landscape continues to be shaped by social and technological developments, further skillsets, or adaptations of knowledge and skills, will undoubtedly come into prominence. The areas of understanding, knowledge and skills discussed include:

- Digital dexterity
- Digital curation
- Data librarianship
- Open scholarship
- Digital humanities librarianship
- Information governance
- Artificial intelligence and machine learning
- Media literacy
- Cultural competence.

The digital information environment is clearly the key driver for most of these evolving areas of professional practice, and they have international relevancy. The one area of particular significance for library and information services in Australia is cultural competence, although there are naturally some shared understandings with other countries with First Nations peoples, such as New Zealand and Canada.

4.1   Digital dexterity

Here in Australia, a participatory workshop was hosted by CAUL in 2019 with the goal of developing a digital information framework. The workshop, attended by over 70 library professionals, was facilitated by Helen Beetham who had led Jisc's work on the digital capabilities framework (Jisc, n.d.). CAUL has stressed the value of digital dexterity in education, in employment and in life. Digital dexterity includes digital and information literacy, as well as "a range of capabilities including ICT proficiency, digital learning and creation, digital collaboration, media and data literacy, and digital identity" (CAUL, 2021a). The model is presented in Figure 4.
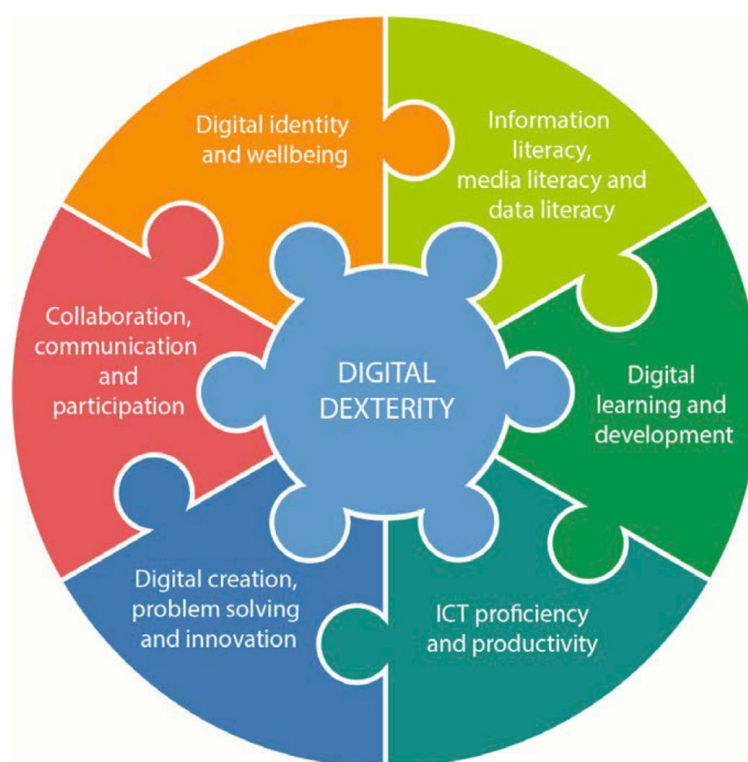
Figure 4. Digital dexterity model (CAUL, 2020)

The specific areas of knowledge, the skillsets and the personal attributes associated with these capabilities are detailed in the resource entitled *Digital dexterity framework for library professionals* (CAUL, 2020). The knowledge areas and personal attributes, extracted from the framework, are presented in Table 35.

Table 35. Digital dexterity framework: Knowledge and attributes (CAUL, 2020)

Domain	Knowledge	Attributes
ICT proficiency and productivity	A library professional understands:	
	- The range of software and apps relevant to their role as a library and information professional - Basic concepts in computing, editing, coding and algorithmic thinking - Information management - How programs and systems interoperate - The need to stay up to date as digital systems and practices change - How digital technology is changing scholarly and professional practice	- Agility - Creativity - Cognitive flexibility - Versatility
Digital learning and development	A library professional understands:	
	- Opportunities and challenges involving learning online - Personal needs and preferences as a digital learner	- Willing lifelong learner - Self-direction - Self-reflection - Adaptability - Confidence

Domain	Knowledge	Attributes
	• Importance of lifelong learning for personal development • How students learn with digital technology, and how they develop digital habits of study • How researchers develop as digital scholars • Basics of digital pedagogy	
Digital creation, problem solving and innovation	A library professional understands:	
	• Digital production processes • IP, copyright and licensing essentials • Digital research methods • Different data analysis tools and techniques • Innovation, enterprise and project management in digital settings	• Creativity • Judgement and decision-making • Critical thinking • Versatility
Collaboration, communication and participation	A library professional understands:	
	• Features of different digital media and tools used for collaboration and communication • The range of communication norms and needs • How digital media and networks influence social and scholarly behaviour	• Communication • Collaboration/teamwork • Self-direction
Information literacy, media literacy and data literacy	A library professional understands:	
	• Copyright and open access alternatives • How data is used in professional and public life • Legal, ethical and security guidelines in data collection and use • How algorithms work • How personal data may be collected and used • Digital media as a social, political and educational tool • Technical aspects of digital media production	• Creativity • Critical thinking • Cognitive flexibility • Judgement and decision making
Digital identity and wellbeing	A library professional understands:	
	• Reputational benefits and risks involved in digital participation • Benefits and risks of digital participation in relation to health and wellbeing	• Versatility • Critical thinking • Adaptability • Judgement and decision making • Communication • Confidence

This *Digital dexterity framework* also includes the capabilities that are typically applied in the different domains. As an example, the domain of Digital creation, problem solving and innovation encompasses the following capabilities (CAUL, 2020, p.4):

- Design and create new digital media and re-use, remix, re-purpose, enhance and share digital media
- Strategically collect and analyse data using digital tools and techniques
- Use digital evidence to solve problems and find new solutions
- Innovate digital practices in librarianship and scholarship
- Develop new ideas, projects and opportunities utilising appropriate digital technologies
- Contribute to development of digital scholarship
- Showcase best practice in learning and encourage innovation in others.

It is acknowledged that some of the knowledge areas listed in the CAUL framework, e.g. information management, open access, copyright or intellectual property, are included in most of the core skills frameworks and many of the specialised skills resources developed for academic and research libraries. However, this framework does not focus on the hard technical skills required in a digital environment; the emphasis is placed on the challenges and opportunities inherent in the evolving digital environment. This invites library and information professionals to have a versatile, adaptable and innovative mindset to guide their professional practice. To some extent, it echoes the philosophy that underpins the CARL framework, *Competencies for librarians in Canadian research libraries* (CARL, 2020), where a mindset is described as "a collection of attitudes, inclinations, or habits of mind useful in achieving an outcome" (CARL, 2020, p.3) which fosters the learning, growth and development that is essential to professional success.

In the US, the term "digital fluency" has been used to describe "the attitude of continuous learning for constantly changing social and economic contexts" (Calvert, 2020, p.12). The development of digital fluency is viewed as a core library service, with library staff introducing their users to "concrete digital scholarship and coding skills, such as programming languages, software carpentry, and data visualization, research data management and open science practices; and scholarly communications topics such as copyright, identity management, and navigating academic publishing" (Lippincott, 2021, p.16). It is essential that library and information professionals have a holistic understanding of digital information environments to work with "an unprecedented volume and diversity of digital artifacts, the proliferation of machine learning (ML) technologies, and the emergence of data as the 'world's most valuable resource'" (Lippincott, 2021, p.3).

4.2   Digital curation

The definition of 'digital curation' provided by the Digital Curation Centre (DCC) (2010) states that it "involves maintaining, preserving and adding value to digital research data throughout its lifecycle" (p.63). The benefits of the active management of data include increasing the long-term value of existing data, reducing duplication of research data creation, facilitating the sharing of research data and mitigating the risk of digital obsolescence. More broadly, data curation embraces the fields of data curation, digital preservation, electronic records management, eScience and digital librarianship.

Feng and Richards (2018) describe digital curation as a relatively new concept that "attempts to bridge boundaries between archivists, librarians, records managers and other information professionals" (p.62). The responsibilities for planning and managing digital resources to ensure long term preservation aligns with the work of records managers, while the responsibilities relating to ensuring access to data reflects the work of librarians and archivists. However, while the obligation

to care for a unique collection is a professionally fundamental one, not all collecting institutions have specialised staff who can care for digital materials. The iSchool at San José State University identifies digital curation as a career pathway for graduates of the MLIS program (SJSU, 2021a):

> Digital curation originally referred to the process of establishing and developing trusted digital repositories for research data that can be used by current and future scientists, historians, and scholars. But business enterprises also utilize digital curation to reserve, share, and add value to their digital data and objects in order to improve their operational and strategic processes. Successful digital curation ensures digital objects remain understandable, accessible, usable and safe over time and beyond the limits of technical obsolescence.

The areas of core theory and knowledge are presented in the outline of the specialisation (SJSU, 2021a):

- Undertaking actions to promote curation and preservation of digital data and objects throughout the data lifecycle
- Identifying, using and evaluating current and emerging digital curation technologies
- Conceptualizing and planning the creation and storage of digital data and objects
- Determining specifications for a trusted digital repository or a digital archives/preservation service
- Identifying key concepts and standards in digital preservation
- Working with information assurance frameworks and risk management planning structures to ensure that an organization's information resources and assets are protected
- Managing records as operational, legal and historical evidence in electronic environments.

It is stressed that effective leadership and management of people and information are also important.

Over a decade ago, a preliminary curriculum framework for the field of digital curation was a significant output from the *DigCCurr* project led by the University of North Carolina – Chapel Hill, in partnership with the US National Archives and Records Administration (NARA). The project was funded through an Institute of Museum and Library Studies (IMLS) grant. The *Matrix of digital curation knowledge and competencies* includes six dimensions (Lee, 2009):

1. *Mandates, values and principles*
   Core reasons why the digital curation functions and skills should be carried out; they are made explicit through professional codes of ethics, industry and professional standards, laws and policies, and design principles
2. *Functions and skills*
   'Know how' as opposed to the conceptual, attitudinal or declarative knowledge that dominates several of the other matrix dimensions; 24 high-level function categories are listed, e.g. access, administration, advocacy and outreach, or data management
3. *Professional, disciplinary, institutional, organizational or cultural context*
   Understanding of the challenges, opportunities and characteristics of particular disciplines or institutions
4. *Type of resource*
   The different types of resources that are the target of digital curation activities, e.g. the level of abstraction, the medium, the format, or the genre

5. *Prerequisite knowledge*
   Elements of knowledge that are instrumental to understanding and applying other aspects of the curriculum, including specialized terminology and characteristics of terminology
6. *Transition point in information continuum*
   Points of transition that span from pre-creation design and planning, all the way to secondary use environments, e.g. transition into storage, transition into an archive.

Harvey and Oliver (2016) describe the *DigCCurr* model as a comprehensive approach to identifying the knowledge and skills required for digital curation. Despite being published in 2009, the value of *DigCCurr* has been noted by Feng and Richards (2018) who recommend that it can used as the basis for "holistic or multi-dimensional conceptual models to operationalize professional competency for digital curation" (p.74).

An interesting project, funded by the European Commission's Leonardo da Vinci program, led to the development of a curriculum framework for vocational training in digital curation. The Digital Curator Vocational Education Europe Project (DigCurV) sought to address the need for the emerging range of skills required by digital curators working in the GLAM sector (DigCurV, n.d.-a). The *DigCurV curriculum framework*, released in 2013, recognises that complexity nature of digital curation: four domains of skill represent the building blocks, with a range of sub-domains within each domain (DigCurV, n.d.-b):

- Knowledge and intellectual abilities
  - Subject knowledge
  - Information skills
  - Data skills
  - Selection/appraisal
  - Evaluation studies
- Management and quality assurance
  - Risk management
  - Audit and certification
  - Resource management
- Personal qualities
  - Integrity
  - Communication and advocacy skills
  - Responsiveness to change
- Professional conduct
  - Regulatory requirements
  - Regulatory compliance
  - Ethics, principles and sustainability.

This framework can be viewed through three different 'skills lenses', with the skills mapped to the requirements of the different groups of stakeholders, along the spectrum from practical and operational to strategic and tactical:

- Practitioner lens
- Manager lens
- Executive lens.

Three levels of competency are considered (DigCurV, n.d.-c):

- *Basic* [is aware of…]
  - Maintains a basic awareness of a given subject area, including basic knowledge of the range of issues that shape developments in the subject area
- *Intermediate* [understands…]
  - Able to demonstrate understanding of a given subject area, and possesses some knowledge of the terminology, business processes and tools relevant to the subject area
- *Advanced* [is able to…]
  - Possesses detailed knowledge of a given subject area, and is able to apply this knowledge to complete tasks on an independent basis.

It is pointed out that the levels of basic/intermediate/advanced competency do not correlate with the practitioner/manager/executive lenses. The example is provided where a practitioner may require an advanced knowledge of metadata standards in their work, while a senior manager needs only a basic awareness to guide their responsibility for strategic planning.

The framework presents a set of detailed skill identifiers for each sub-domain. For the domain of Knowledge and Intellectual Abilities (KIA) the sub-domain of Subject knowledge includes 17 competencies (DigCurV, n.d.-c):

- Subject-specific knowledge and definitions
- Relevance of, and need for, digital curation activity within subject context
- Current and emerging subject landscape (trends, people, institutions)
- Respective responsibilities for digital curation across institution
- Scope the boundaries for digital curation across the institution
- Fundamental digital curation principles including lifecycles
- Designated community
- Select appropriate technological solutions
- Apply appropriate technological solutions
- Develop a professional network for support
- Digital preservation standards
- Digital curation and preservation terminology
- Scope of team responsibilities within institution
- Information technology definitions and skills
- Select and apply digital curation and preservation techniques
- Scope of own role within institutional context.

The sub-domain of Ethics, principles and sustainability within the domain of Professional conduct includes five competencies:

- Social and ethical responsibility in digital curation
- Energy consumption and carbon footprint of digital curation activity
- Embed principles of ethical conduct throughout institutional policies, including those affecting curation activity
- Adhere to principles of ethical conduct
- Evaluate and treat employees fairly.

Although the DigCurV framework is described as the curriculum framework for vocational training in digital curation, the scope of the framework arguably extends into the professional sphere, as evidenced by the three lenses of practitioner, manager and executive and the proposed use of the framework to support the professional development of digital curators.

The DigCurV project included a training needs analysis which encompasses a survey, a series of focus groups and an examination of job advertisements (Engelhart et al., 2012). It was found that, at the time of the study, there was a lack of qualified and/or appropriately skilled staff in cultural heritage organisations as well as in scientific institutions. While the skills and competencies that were needed were wide-ranging, there was a strong demand for specialised skills in digital preservation and technical expertise, for example data management planning, evaluating and selecting data for long-term preservation, ingesting data, storing data and archive administration. The soft skills that underpin successful communication and collaboration, plus expertise in project management and staff training and development were also lacking. Overall, those working as digital curators needed "knowledge of the organisation and the subject domain, as well as archival, library or information science", along with "an open minded attitude, the willingness to learn, the ability to think in structures and processes as well as a solution-focused way of thinking" (Engelhart et al., 2012, p.59).

The IMLS has funded further digital curation curriculum projects: a data curation study program at the University of Illinois Urbana-Champaign (UIUC) and the *DigIn* project at the University of Arizona. Study programs in the US include the digital curation specialisation at SJSU, mentioned earlier, and a summer learning institute at UIUC, the Data Curation Education Program. Simmons College in Boston has a Digital Stewardship Certificate program (Harvey & Oliver, 2016). In the UK, Aberystwyth University offers a Master of Science Digital Curation (Aberystwyth University, 2021a; Higgins, 2017) as well as short courses in digital preservation. The short course learning outcomes are listed as (Aberystwyth University, 2021b):

- Provide an analytical, contextual account of the development of digital preservation as a 21st century information issue
- Identify and critically evaluate the characteristics of digital objects, justify the need to preserve each characteristic for continued access and develop a strategy for digital preservation
- Propose methods for developing and maintaining control over a complex array of digital forms and formats, which address the necessary conditions, techniques and models for digital preservation
- Formulate rational hypotheses regarding the potential role of institutional repositories and open access initiatives in enabling digital preservation
- Demonstrate an understanding of the importance of standards in digital information discovery and delivery.

Recently, Arizona State University (ASU) was awarded a 2021 IMLS grant to "deliver an innovative digital preservation training program to practicing librarians and archivists to provide ongoing care for their digital collections" (ASU, 2021).

In Australia, National Archives Australia (NAA) offers an eLearning training program designed to increase government employees' awareness of, and skills in, digital preservation and to support the development of government agencies' digital preservation strategies (NAA, n.d.-e). The eLearning modules cover the basic concepts and terminology associated with digital formats, digital preservation strategies, and the use of metadata in digital preservation. At the academic level, Charles Sturt University (CSU) offers the subject INF443 Digital Curation and Preservation, with five key learning outcomes covering the ability to (CSU, 2021b):

- Demonstrate understanding of the need for digital curation and preservation in public and private organisations
- Identify and critically assess theoretical and practical issues in digital curation and preservation
- Explain digital curation and preservation concepts, terms, tools and technologies
- Demonstrate understanding of the digital curation and preservation lifecycles and identify the activities associated with each stage
- Examine and critically analyse the challenges associated with data and information sharing.

Feng and Richards (2018) advise that the professional discussion on skills for digital curation will not only apply to work with archives and repositories, but also to activities in social and scientific research, open data requirements and the exploration of big data. The term 'cyberscholarship' has been used to capture the interplay between networked computing, data and scholars: Harvey & Oliver (2016) explain that "new forms of research and scholarship are developing based on the availability of [scholarly] digital materials and on computing techniques to analyze and present them" (p.19). Digital scholarship allows for distributed groups of researchers to collaborate and develop and share large data sets. The responsibilities for managing data falls into the field of data librarianship.

4.3   Data librarianship

Several competency frameworks relating to the field of research and data librarianship were reviewed in section 3.2.2 of this report (e.g. ANDS, n.d.-c; CAVAL, 2017; Schmidt & Shearer, 2016). Beyond this, Khan and Du (2018) undertook an analysis of 50 job advertisements to explore the core competencies for 'data librarianship' and to identify emerging trends in skills requirements and work responsibilities. In line with the various position titles which include data services librarian, research data management librarian, research data librarian, data curation librarian, data visualisation librarian and data literacy librarian (Khan & Du, 2018), Schmidt and Shearer (2016) identified three principal areas of responsibility: managing data collections, providing access to data, and advocacy and support for managing research data. Khan and Du (2018) argued that the role of data librarian is not novel, "but the current state of the data deluge and the increase in digital data requires more librarians to manage data at academic institutions" (p.3).

The skills expectations, as outlined in the job advertisements, covered research assistance, knowledge of government and proprietary data sources, statistical software packages (e.g. R, SPSS, Python, NVivo), quantitative and qualitative data analysis, data visualisation, metadata, outreach and teaching (Khan & Du, 2018). Beyond these 'required skills', there were also some 'preferred skills', for example programming languages, a grasp of current and emerging technologies, institutional repositories, data curation, geospatial datasets, and project management. Successful candidates would also be involved in drafting policies, guidelines and best practice resources, and providing research support consultations to members of the university's research community.

Semeler, Pinto and Rozados (2019) view the responsibilities of the data librarian through the lens of the data scientist. They determine that data librarianship is a blend of technical and human/social skills where the principles, practices and resources of traditional librarianship are applied to data (Semeler et al., 2019). The field encompasses many aspects of a librarian's work: acquisition

(collection development), organisation, (cataloguing and metadata), as well as the implementation of user services. Knowledge of file formats, documentation and metadata standards, and disciplinary research practices is essential. Data librarians must have the skills to work with any kind of data and comprehend how digital research practices impact on LIS theory and practice. They should be embedded in the research activities so that they can "participate in the decision-making process" and contribute to "all stages of the scientific research as facilitator" (Semeler et al., 2019, p.778). Academic librarians themselves also perceive that their greatest value lies in facilitation, particular through their consultation-related skills in the context of data management planning and data curation, and developing and teaching instructional content related to data services (Joo & Schmidt, 2021).

Research conducted by Federer (2018) focused on a survey of information specialists in the fields of biomedicine and health sciences. Respondents (n=82) were asked to identify the range of knowledge, skills and attributes that they believed were important to their work. The categories of skills presented in the survey instrument encompassed groupings of data management skills, technology skills, evaluation and assessment skills, teaching skills, general library skills, networking and outreach skills, professional involvement and personal attributes. The data management skills included (Federer, 2018, p.298):

- Data management planning
- Data preservation, curation or stewardship
- Support for data resources (e.g. data respositories)
- Support for clinical data management
- Applying or developing ontologies or metadata
- Development of data services
- Support for general data management
- Support for institutional repository
- Support for data use and analysis
- Bioinformatics support.

Federer (2018) found that strong subject matter knowledge, ideally gained through academic studies, was important when building relationships and collaborating with researchers. However, studies in library and information science provided a valuable foundation in information retrieval, information seeking behaviour and scholarly communication practices. Beyond this, personal attributes were critical: "curiosity and the desire to learn, the ability to think 'outside the box', and a willingness to try new things" (Federer, 2018, p.299).

The Medical Library Association (MLA) framework, *Competencies for lifelong learning and professional success* (MLA, 2017) was reviewed in section 3.3.2 of the report. In 2018, a working group was established to draft a further MLA competency to delineate the skills and knowledge required by health information professionals who provide data support (Federer, 2020). The scoping statement reads (Federer et al., 2020, p.305):

> We have a range of data-related knowledge and skills that support our users. We also understand the unique needs of our users and our institutions. We apply our skills to provide, facilitate access to, and evaluate data services, including data literacy instruction, data management, curation, preservation, visualization, analysis, sharing, and reuse. We encourage the use of open science practices where possible and the promotion of scientific practices that will ensure research integrity, reproducibility, and other ethical data practices.

The working group developed a set of five performance indicators which detailed the knowledge and skills needed for data services in the field of the health sciences. The work was informed by a review of relevant articles and reports (Bryant, Lavoie & Malpas, 2017; Cox, Verbaan & Sen, 2012; Creamer et al., 2012; Federer, 2018; Kennan, 2016; Khan & Du, 2018; Rambo, 2015; Schmidt & Shearer, 2016; Semeler et al., 2019; Shahbazi & Hedayati, 2016; Yoon & Schulz, 2017). The performance indicators include (Federer et al., 2020, pp.305-308):

- Performance indicator 1: Applies principles of data literacy
- Performance indicator 2: Establishes and advances data services
- Performance Indicator 3: Supports research data best practices across the data lifecycle
- Performance indicator 4: Applies knowledge of research methods, research ethics and rigor, and open science practices
- Performance indicator 5: Provides training and consultation for data-related topics.

Each of the performance indicators is expanded through the descriptions of proficiencies expected at the 'Basic' level and the 'Expert' (or 'Advanced') level. For Performance indicator 1: Applies principles of data literacy, a staff member at the Basic level "finds, interprets, and manages data according to ethical principles" (Federer et al., 2020, p.305, while a staff member at the Expert level "critically appraises data and data collection methods" (p.306). In their article, the authors provide a detailed description of the skills and capabilities at both levels of professional experience.

The MLA now promotes the data services competency as a professional development pathway through the completion of formal training. The MLA Basic Data Services Specialization (DSS) Certificate was launched in 2020, with the Advanced DSS Certificate currently under development (MLA, n.d.). The DSS Certificate provides evidence of the health information professionals skills in providing data services, their commitment to offer quality data services and their commitment to staying current with developments in the field.

Calvert described data as "the fuel of emerging technologies" and "a byproduct of digital life" (2020, p.7). He proposed that, since "a continuum of data analysis skills will be required in every discipline, for students as learners and job seekers, for instructors, and for librarians" (p.7), staff in research libraries would play a key role in skills development across the academic community. Chen and Zhang (2017) found that the essential skills relating to data management were not necessarily MLIS-specific. The analysis of 70 job advertisements for data management professionals posted between 1 January and 30 April 2015 revealed that the MLIS qualification was a requirement for only around one quarter (27%) of the advertised positions. Three possible interpretations for this: many employers were not aware of the potential contributions library and information professionals could make; LIS graduates do not have any advantage over graduates from other disciplines; LIS courses do not prepare students for data management roles. The authors indicated that, as "the nature and scope of 'data management' is still evolving" (Chen & Zhang, 2017, p.22), further monitoring of the field of practice was needed.

Over the ensuing five years, data management skills have increased in prominence: skills in data management are of increasing importance in academic and research libraries. The Australian Research Data Commons (ARDC) underpins Australian research infrastructure and advocates for high quality data management practices at both the individual researcher and institutional levels.

Accordingly, the ARDC promotes data management skills development and training through a range of information and learning resources, supported by communities of practice (ARDC, 2021b):

- Data management plans
- Software publishing, licensing and citation
- Research software rights management guide
- Sensitive data management
- Geospatial capabilities
- FAIR data guidelines
- FAIR data 101 express modules
- Software carpentry
- Metadata management
- Indigenous data
- 23 (research data) things.

It has been acknowledged that professional knowledge and skills are required to make productive use of the data commons, for example to use the virtual labs or to manage data for sharing and re-use (the FAIR principles) (Simons, 2019). Events such as the eResearch Skilled Workforce Summit play an important role in coordinating the skills development of library and information professionals by examining the skills that "our researchers, data or software specialists and research support staff need to survive and thrive in this new era of data-enabled research" (ARDC, 2019).

The centrality of data management was also recorded in the findings of a survey undertaken in 2015 by the Association for Intelligent Information Management (AIIM) to capture the members' perceptions on the skills that would be required by information professionals over the next three to five years. The *NextGen InfoPro* report (AIIM, 2015) described the information professional as "an information and data lifecycle subject matter expert (SME)" (p.4) who could blend their skills in technology, data analytics, metadata management, data privacy and security with their subject matter expertise. It was noted that skills in data quality management, data cleansing and data migration would support the goal of increased findability and usability of critical business information, especially given that cloud computing and the use of mobile devices has become ubiquitous. As there was "a growing awareness that the increasing generation of data is becoming more complex and difficult for individuals to manage" (AIIM, 2015, p.6), there was a potential role for artificial intelligence. A rise in the requirements for legal and regulatory compliance had led to a deeper understanding of "the need for individuals to be held responsible and accountable for information governance" (AIIM, 2015, p.7).

The most important soft skills included innovative thinking and identifying new ways of working, commitment to change management processes, and establishing effective relationships with colleagues and other stakeholders. The study concluded that it was important for business leaders to better understand the contributions that information professionals can make to the achievement of organisational goals, while information professionals need to develop a clearer understanding of business requirements, particularly in the context of information governance and the security of information assets.

National Archives of Australia (NAA) places high value on the importance of managing information and data, and provides advice about data management. The NAA *Data capabilities framework for information professionals* (NAA, n.d.-f) represents an extension of the *Information management*

capabilities framework (NAA, n.d.-d) discussed in section 3.3.6 of this report. There are eight key capabilities (NAA, n.d.-f):

- Data governance
- Data literacy
- Data analysis
- Data quality management
- Data architecture
- Database design and data modelling
- Reference and master data management
- Data tools and programming.

As with the *Information management capabilities framework*, the capabilities are mapped to a maturity model with a four-fold progression: Foundation, Practitioner/Skilled operational, Management/Specialist, and Executive/Lead levels. The listed capabilities develop from a general understanding of the principles and procedures involved in data management, through to an advanced technical comprehension of the strategic role that data can play in the organisation. Links are provided on the NAA webpage to the joint ALIA/ASA/RIMPA statement on *Foundation knowledge, skills and attributes relevant to information professionals working in archives, libraries and records management* (ALIA, 2020f) and to the framework created by Data Management Association International (DAMA-I): the *Data management body of knowledge* (DMBOK2) (DAMA-I, 2013).

DMBOK2 presents 11 knowledge areas of data management in the format of a wheel, referred to as the DAMA Wheel, with data governance representing the hub (DAMA-I, 2013):

- Data governance
- Data architecture
- Data modelling and design
- Data storage and operations
- Data security
- Data integration and interoperability
- Documents and content
- Reference and master data
- Data warehousing & business intelligence
- Meta-data
- Data quality.

The NAA website stresses the imperative for the effective management of government data and links are provided to some of the resources developed by the Commonwealth Government's Office of the National Data Commissioner (ONDC). Guidance is offered on four key principles of effective data management, referred to as 'the foundational four' (ONDC, 2020):

- Leadership
  - A senior leader is responsible and accountable for data across the agency
- Data strategy
  - An agency has a clear vision and plan for using data to achieve objectives
- Governance
  - Mechanisms exist to oversee data management
- Asset discovery
  - Data assets have been identified and recorded.

In the Australian Public Service (APS), a whole-of-government approach to building data use and analytics capability has been recommended, with the goal of encouraging staff to adopt a 'discovery mindset' (Department of Prime Minister and Cabinet (DPMC), 2016, p.ii). In terms of training and development, an eLearning program on data literacy, comprising five learning modules, is available for government staff (Australian Public Service Academy (APSA), n.d.):

- Data literacy – Module 1: Using data in the APS
- Data literacy – Module 2: Undertaking research
- Data literacy – Module 3: Using statistics
- Data literacy – Module 4: Visualising information
- Data literacy – Module 5: Providing evidence for decision makers.

The learning and development model for data skills, the *APS data skills and capability framework* (DPMC, 2016), encompasses the basic data literacy program to build a general understanding of the field, university courses for APS officers who require more specialised data literacy (postgraduate degrees or non-award short courses and CPD programs), data training partnerships with external organisations, and data fellowships to provide select data experts with an intensive coaching program (DPMC, 2016, p.4). Brown, Wolski and Richardson (2015) proposed a similar development model for data librarians working in Australian academic libraries: knowledge and skills should be acquired through a blend of formal education, informal training opportunities (e.g. self-directed or peer learning, communities of practice and mentoring) and access to support networks, such as CAUL and the ARDC.

4.4   Open scholarship

The topic of open scholarship has been in the spotlight in recent times: in June 2021 the CAVAL Research and Information Group (CRIG) hosted two online forums entitled *SOS: Selling open scholarship – Innovations in librarians advocating for open scholarship* (CAVAL, 2021). Presentations focused on open knowledge, data visualisation to support open scholarship, open access publishing and open educational resources. The following month, ALIA HLA ran two lunchtime seminars on open scholarship in the health sciences to share information on open research data, open scholarly communication, open access publishing and open repositories (ALIA HLA, 2021b). The wide interest in the open scholarship landscape was evident given the range of the speakers' academic institutions: Open Access Australia, CAUL, Australian National University, Flinders University, Monash University, La Trobe University, Griffith University, South and East Metropolitan Health Service, Western Australia, Curtin University, University of New South Wales, The University of Melbourne and Swinburne University.

As these online forums indicate, open scholarship is of national and, indeed, international importance. It has been described as encompassing "open access, open data, open science, open educational resources, and all other forms of openness in the scholarly and research environment" (CAUL, 2019). The creation, preservation and sharing of knowledge is radically changed in the open environment (CAUL, 2019, p.2):

Open scholarship and FAIR (Findable, Accessible, Interoperable, Reusable) scholarly practices underpin the integrity of research, its efficient dissemination to researchers, students, policy makers and to the wider public and facilitates faster scientific discovery and problem solving. A commitment to open scholarship contributes to research impact through the principles of transparency, global access and flexible reuse and will maximise the visibility of researchers and the outputs of their research.

The open scholarship agenda aligns with IFLA's ethical principle of promoting open access, open source and open licences (IFLA, 2012b) and ALIA's core value of promoting the free flow of information and ideas through open access to recorded knowledge, information and creative works (ALIA, 2018a) and the open access policy statement (ALIA, 2018g). ALIA encourages librarians to actively participate in the open access debate and policy development, to raise awareness about the value of open access, to develop research repositories and digital archives, and to support open access publishing (ALIA, 2018g). The complexities of the external environment should not be overlooked, however: as the open scholarship agenda is not 'library led'. It is critical that library and information professionals continue to build their understanding of the intersections between the converging areas of licensing, copyright and funding (F. Bradley, personal communication, January 13, 2022).

A number of research reports and frameworks discussed in this report include the skills associated with open scholarship (ANDS, n.d.-b; CAUL, n.d.; CAVAL, 2017; Calarco et al., 2016; Federer, 2020; NASIG, 2020; RLUK, 2012; RLUK, 2021a; Schmidt & Shearer, 2016). CAUL acknowledges that all members of the academic community require training and development to participate in and contribute to open scholarship practices. The current *Advancing open scholarship (FAIR)* program includes a number of cross-institutional projects such as Libraries and open publishing case studies, FAIR and open non-traditional research outputs and the open research toolkit (CAUL, 2021b).

The *Open Research Toolkit* was developed by CAUL and the Australasian Research Management Society (ARMS) in order to support Australasian institutions to develop strategy and policy and to implement good practice (CAUL & ARMS, 2021a). The working group also included representatives from the Australian Research Council (ARC), the National Health and Medical Research Council (NHMRC), and the Australian Research Data Commons (ARDC). The toolkit represents an authoritative introduction to and information resource for all aspects of open research: policy, governance, infrastructure, advocacy and practice. A wealth of supporting resources created and disseminated by research bodies and academic institutions offers exemplars of principles, policies, guidelines and procedures. As researchers are encouraged to adopt open practices across all elements of the research lifecycle, detailed guidance is provided on specific areas of research activity (CAUL & ARMS, 2021b):

- Conducting responsible research
- Complying with the open research policies of research funders and institutions
- Using Creative Commons licensing
- Using persistent Digital Object Identifiers
- Making research outputs openly accessible
  - Publishing in open access journals
  - Depositing publications in open repositories
- Supporting the FAIR principles
  - Findable, Accessible, Interoperable, Reusable
- Applying the CARE principles for Indigenous data governance
  - Collective benefit, Authority to control, Responsibility, Ethics

- Making code and software openly accessible
- Maintaining current awareness.

Kingsley points out that, increasingly, structured training programs are available to researchers, but "there is very little formal training for people working in [scholarly communication] and most learning is occurring on the job or is self-directed" (Kingsley, 2021b). McCaffrey et al. (2020) declare that "the array of knowledge, skills and competencies needed to practice Open Science… can be daunting". In response to this challenging situation, LIBER's Digital Skills for Library Staff and Researchers Working Group conducted a skills analysis project that has culminated with a visualisation "to provide library staff and researchers with a quick visual guide they can use to identify what digital skills they might need to practice open science effectively" (McCaffrey et al., 2020). The visualisation is presented in Figure 5 (McCaffrey et al., 2020).
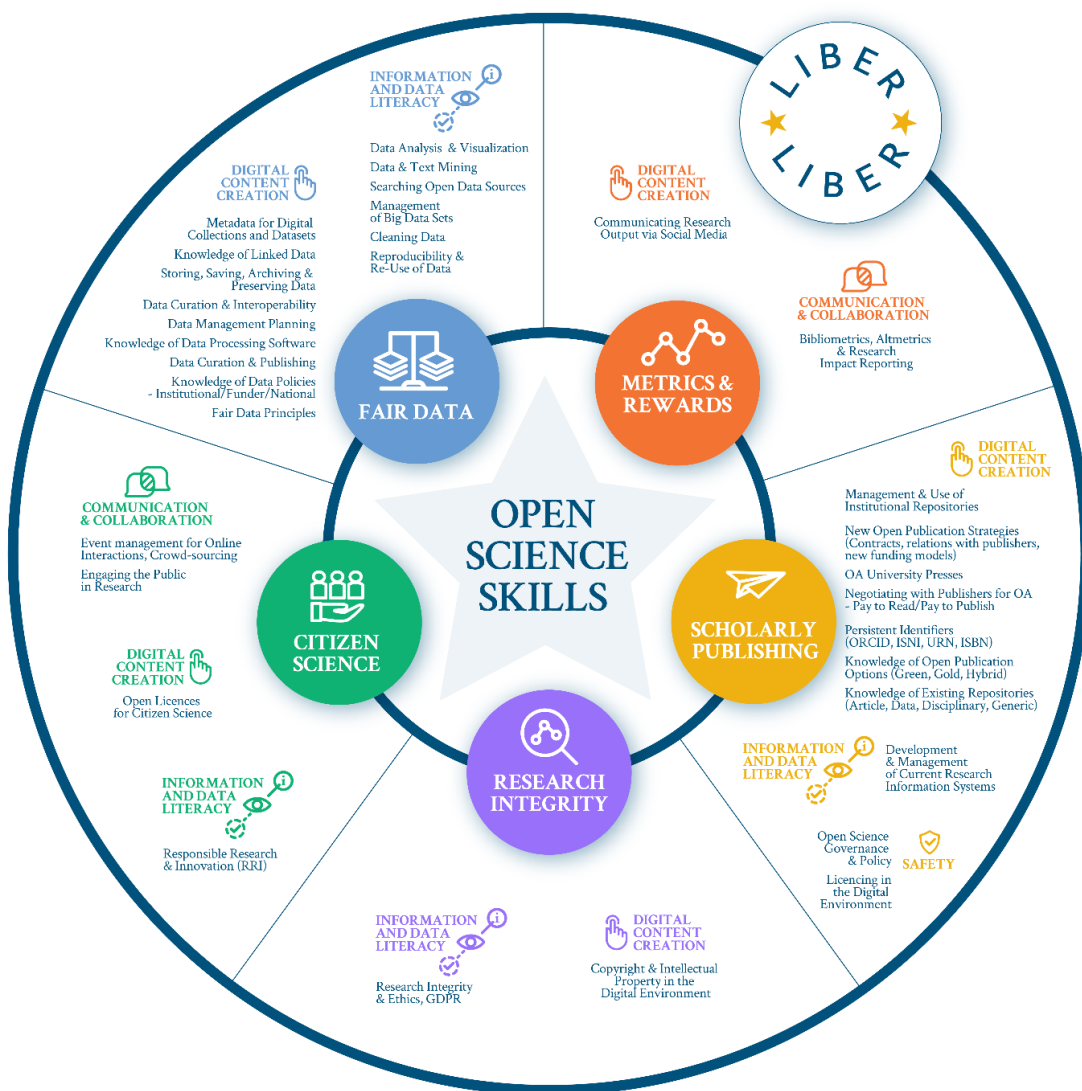
Figure 5. Open science skills diagram (LIBER, 2020).

Five key domains are presented in the visualisation:

- FAIR data
- Metrics and rewards
- Scholarly publishing
- Research integrity
- Citizen science.

The three capability areas of information and data literacy, digital content creation, communication and collaboration are mapped to each of these domains, with differing fields of knowledge and expertise presented, as appropriate to the domain itself. For example, the capability area of information and data literacy is conceptualised as follows:

- FAIR data
    - Data analysis and visualisation
    - Data and text mining
    - Management of Big Data sets
    - Cleaning data
    - Reproducibility & re-use of data
- Scholarly publishing
    - Development & management of current research information systems
- Research integrity
    - Research integrity & ethics, GDPR
- Citizen science
    - Responsible research & innovation.

In the UK, the Vitae Researcher Development Framework (RDF) presents a model of the knowledge, behaviours and attributes of researchers, with four domains (Vitae, 2021a):

- Knowledge and intellectual abilities
- Personal effectiveness
- Research governance and organisation
- Engagement, influence and impact.

The research training activities that are offered are mapped to the Vitae RDF (Vitae, 2021b) and individuals and organisations can use a planning app to support a strategic approach to research skills development (Vitae, 2021c), although very little guidance about the skills required in open scholarship activities. Beyond this, many universities offer their HDR students formal research training pathways, e.g. the Career Development Framework coordinated by the UQ Graduate School (UQ, 2021a):

- Research skills
    - Integrity and ethics
    - eResearch and data management
    - Research design
    - Research software and planning
    - Statistics and modelling
- Professional skills
    - Career planning
    - Entrpreneurship
    - Impact and influence
    - Publishing and authorship
    - University teaching

- Transferable skills
  - Candidature management
  - Communication
  - Writing skills
  - Working with others.

Learning and development activities are mapped to the early, mid and late stages of the HDR journey (UQ, 2021b). The academic library's research support staff can tailor their training offerings to resources such as a career development framework for researchers.

UNESCO is recommending "systematic and continuous capacity building in open science concepts and practices" (UNESCO, 2021a, Annex, p.12), including digital literacy, digital collaboration practices, data science and stewardship, curation, long-term preservation, content ownership and practices etc. It is also hoped that a framework of open science competencies, allowing for disciplinary differences, will be created for researchers at different stages of their career. The OECD reports that not enough attention is being given to the skills needed by researchers and by research support staff, and recommends that "the provision of adequate training is essential for building digital workforce capacity" (OECD, 2020, p.26).

The OECD differentiates between the specialised domain-specific digital skills that are required by researchers, and the foundational digital skills that should incorporate "the broad concepts and processes associated with Open Science and the social accountability of research" (OECD, 2020, p.22). Reference is made to the EU's report on *Turning FAIR into reality* (EU, 2018b) where the desired competencies are grouped in two major areas (OECD, 2020, p.23):

- Data science skills
  - Knowledge drawn from computer science, software development, statistics, visualisation, machine learning, information modelling, algorithms and information integration
- Data stewardship
  - Skills required to manage, share, preserve and store data throughout the research lifecycle, data cleaning to remove inconsistencies in data sets, organising and structuring data, and metadata.

The FAIR4S skills and capability framework was developed as part of the European Open Science Cloud (EOSC) pilot project with the goal of helping research communities introduce FAIR stewardship into their work (FAIR4S, 2019). Shanahan et al. (2021) describe how the FAIR4S framework was developed (p.2-3):

> FAIR4S was initially drafted through a mapping exercise, drawing on existing frameworks. The starting point was a core group of 11 data handling competencies identified for undergraduate-level information professionals, and collectively termed digital information literacy skills. These core competences were mapped to a simple data life cycle used in the RISE (research infrastructure self-evaluation) model for planning research data services, resulting in nine skills areas. This in turn was used to identify related competences from two sources: the EDISON competence framework for data science, and a crowdsourced list compiled by the Research Data Alliance interest group on Education and Training in Data Handling.

Nine skills areas in the FAIR4S (2019) framework are outlined:

- *Plan and design*: plan stewardship and sharing of FAIR outputs
- *Capture and process*: Reuse data from existing sources
- *Integrate and analyse*: Use or develop open research tools/services
- *Appraise and preserve*: Prepare and document for FAIR outputs
- *Publish and release*: Publish FAIR outputs on recommended repositories
- *Expose and discover*: Recognise, cite and acknowledge contributions
- *Govern and assess*: Develop open research strategy and vision; Apply policies to comply with legal requirements, ethical and FAIR principles
- *Scope and resource*: Secure funding for open science/support
- *Advise and enable*: Lead by good practice example.

A selection of training materials developed for different groups of stakeholders are reviewed, e.g. for researchers, data librarians, data curators, research software engineers, policy makers or educators and trainers (Shanahan et al., 2021). The LIBER Digital Skills for Library Staff and Researchers Working Group also conducted a survey into open science training practices in Europe (LIBER, 2020). The findings revealed that librarians were viewed as experts in open research support activities, in open access publishing support, in FAIR data management and in the facilitation of citizen science, and across Europe, a considerable proportion of open science training is already managed and coordinated by library staff. LIBER therefore seeks to position academic and research libraries as key partners in skills training for open science.

Here in Australia, the structure and content of the *Open Research Toolkit* (CAUL & ARMS, 2021a) will be valuable as the basis for creating training and development activities both for librarians and for members of the wider scholarly community, including senior researchers, early career researchers (ECR) and higher degree research (HDR) students. Internationally, it has been argued that the FAIR4S framework provides a valid overview of the skills required in open scholarship, but to date there is no single comprehensive source of training materials. Shanahan et al. (2021) recommend the development of a FAIR-focused curricular framework that could be applied to both formal and informal training materials, as well as providing a schema for organising OER training materials to support skills development for open scholarship across the world.

4.5 Digital humanities librarianship

Zhang, Su and Hubschman (2021) undertook an analysis of 72 job advertisements for digital humanities librarians, posted between 2006 and 2018. Digital humanities (DH) were described as "a relatively new and dynamic field that involves a wide range of disciplines" and involves diverse resources and activities, including "digitization, crowdsourcing, archives and databases, digital curation, texts, editing, visualization, geospatiality, gaming and code" (Zhang et al., 2021, p.1). The acquisition of the relevant knowledge and skills is generally achieved through professional development, rather than through LIS education (Poremski, 2017). The increasing demand for DH librarians was evident in the distribution of job advertisements by year: in 2006 there was just one position advertised, but 48 of the 72 advertisements (66.6%) were posted between January 2015 and April 2018. The majority of positions required an MLIS degree plus specialised knowledge in the humanities and social sciences, while some were targeting PhD graduates.

Project management skills were sought for almost two thirds of the positions, and communication skills were important (interpersonal, oral, written or scholarly communication). Desired skillsets included data visualisation, text mining, image analysis, as well as programming and scripting

languages (Python R, Java-Script, Ruby, MySQL and PHP). Digital technologies and standards that applicants required were also listed, e.g. XML, TEI, MODS, METS and GIS. The most common job responsibility was 'digital scholarship', with applicants expected to participate in "digital humanities/digital scholarship projects, center, tools, techniques, research, activities, community, resources, services, lab etc" (Zhang et al., 2021, p.8). In Poremski's study of DH librarians, it was found that their principal tasks involved outreach, digitisation, teaching and instruction, scholarly communication, project management, content selection, metadata, digital mapping and text encoding (Poremski, 2017).

Most of the advertisements reviewed by Zhang et al. (2021) stated that the appointed staff member would be responsible for promoting the library's digital scholarship activities and providing support to academic staff and students. Over half the jobs would involve evaluating existing technologies and/or tools to determine their relevancy to the digital humanities and/or social science research. It was important to be able to advance the digital scholarship agenda in the university by providing training on digital scholarship tools, techniques and platforms and by demonstrating leadership in the development and integration of new technologies and new models of digital publishing. Staff members were also expected to build strategic partnerships with other university units (e.g. research groups, teaching staff, IT services etc) and establishing communities of practice with professional guidance about best practices in the field.

The field of digital humanities has been defined as "the work that gets done at the crossroads of digital media and traditional humanistic study… It is a sort of moving back and forth across those lines, thinking about what computing is, how it functions in our culture, and then using those computing technologies to think about more traditional aspects of culture" (Lopez, Rowland & Fitzpatrick, 2015). In its response to the *Future humanities workforce discussion paper* disseminated by the Australian Academy of the Humanities (AAH) (AAH, 2019), the Australasian Association for Digital Humanities (aaDH) outlined the importance of not only digital literacy, but 'digital metaliteracy', where people do not only need skills to be able navigate the current digital world, but also the flexibility to be able to move easily to what comes next (aaDH, 2019, pp.2-3):

> At a specific level, this means not only being able to use particular tools or techniques, but also knowing how to learn to use these tools more effectively, how to test and discriminate between emerging technologies, how to adapt practice to start using the next generation of technology that comes along (or to critique and challenge those technologies on ethical, social and cultural grounds), how to behave ethically within new technological environments, and how to teach others to do so as well.

As DH activities sit at the intersection of technology and culture, ethical digital literacy is also crucial: "data and technology are not neutral or objective; new developments in these areas have the potential to perpetuate, or even magnify, existing prejudices and exclusions with regard to gender, race, sexuality, colonialism, and more" (aaDH, 2019, p.3).

The Centre for Computing in the Humanities at King's College London offers a Master of Arts in Digital Asset and Media Management (King's College London, 2021), while the program for the Master of Science in Information Management and Preservation, as well as Postgraduate Diploma and Posgraduate Certificate options, is coordinated by the Humanities Advanced Technology and Information Institute at the University of Glasgow (2021). The curriculum encompasses archives, records and information management, curating and managing digital records, digital curation and

preservation issues, archival theory, user needs, and description, cataloguing and navigation. Importantly, DH activities require far more than individual skills and capabilities: "it necessitates collaboration with others within the humanities, and in other disciplines and professions" (aaDH, 2019, p.2), including maths, statistics, applied computer science, computational linguistics, philosophy (Luhmann & Burghardt, 2021).

4.6   Information governance

In recent years, in response to the "exponential growth of data" (Bennett, 2021) and the resulting complexity of associated risks, the field of information governance has become increasingly important. In order to manage the risks that relate to the privacy of personal data in eCommerce and eGovernment, data breaches, hacking and cyberattacks, there has been a push to adopt a strategic approach to information governance. "Information governance provides an overarching strategic framework for organisations seeking to control and secure information throughout their organisations, which both maximises the value of information and minimises the costs and risks of holding it" (Bennett, 2021). As it can also contribute to a holistic understanding of information and data across the organisation, there are opportunities to reduce the challenges resulting from information silos.

Reference has been made to the topic of information governance several times in this report, for example in CILIP's PKSB (CILIP, 2021a), the *Subject benchmark statement for librarianship, information, knowledge, records and archives management* (QAA, 2019), in the healthcare sector (ALIA HLA, 2021; NHS Health Education England & CILIP, 2021), in the legal sector (AALL, 2018), as well as in the contexts of the allied professions (AIIM, 2015; ARMA International, 2017; ARMA International, 2018a; ARMA International, 2021a; DTA, n.d.-b, IRMS, n.d.-a; NAA, n.d.-d) and artificial intelligence (CILIP, 2021c). Data librarianship also encompasses the understanding of data governance (CILIP, 2021c; DAMA-I, 2013).

In terms of the skillsets required, the *Skills framework for the information age* (SFIA) includes information governance, although the name was changed from 'information governance' in SFIA Version 7 to 'information management' in SFIA Version 8 "to avoid confusion or overlap with the new SFIA Governance skill" (SFIA Foundation, 2021d). The skillset is defined as "Planning, implementing and controlling the full life cycle management of digitally organised information and records" (SFIA Foundation, 2021e):

> Information and records are held in many forms including – but not limited to – digital documents, printed materials, microform, e-mail, chats and websites. Information may be structured or unstructured and may be created by internal or external sources.

> Specific laws and regulations may require organisations to maintain records of certain business activities and transactions for a minimum period.

> Activities may include – but are not limited to:

> - Identifying, classifying, valuing, processing, storing, archiving, destroying information and records
> - Governance of how information is used to support decision-making, business processes and digital services
> - Developing and promoting strategies and policies for the design of information architectures, structures and taxonomies

- Capturing and maintaining evidence of and information about business activities and transactions in the form of records
- Implementing systems of cataloguing, metadata, indexing, and classification standards and methods used to organise recorded information
- Ensuring compliance with legal obligations.

The SFIA presents four levels of responsibility, Levels 4-7, which represent the higher levels of autonomy and influence in an organisation. As indicated earlier in this report, the Digital Transformation Agency (DTA) has arranged for a country-wide licence for SFIA (DTA, 2021).

National Archives of Australia (NAA) provides detailed guidance about information governance processes to ensure that government agencies meet the regulatory, legal risk and operational requirements for managing information assets across an entire organisation to support business outcomes (NAA, n.d.-f). As noted earlier in this report, the NAA has developed a *Capabilities framework for information management professionals* (NAA, n.d.-d) which includes information governance skills mapped to four levels of a maturity schema:

- Foundation
  - Is aware of relevant organisational policies, frameworks and procedures
  - Understands that information and data need to be managed within a framework that supports business goals
- Practitioner/skilled operational
  - Understands the role of information governance and is able to apply appropriate frameworks, strategies and policies in the organisation
  - Is able to conduct compliance monitoring and reporting activities for systems and practices
- Management/specialist
  - Is able to establish links between information, data and IT governance
  - Is able to develop and implement information governance frameworks, strategies and policies
  - Is able to plan and manage compliance monitoring and reporting activities
- Executive/lead
  - Is able to endorse strategies to ensure information governance is integrated with data and IT governance, and aligns with corporate governance
  - Is able to advocate for information governance to ensure reduced risk and improved information sharing and reuse
  - Is able to advocate for, or chair, an information governance committee (or equivalent) and ensure key stakeholders are engaged.

The capabilities framework includes the skill requirements for additional areas of practice that are relevant to information governance: legislation and policy, information security, risk management, value of data and information, information and data leadership etc.

ARMA International provides access to a wealth of resources on the different topic areas of information, records, records and information management, knowledge, data, documents and content (ARMA International, 2021b). ARMA's definition reads (ARMA International, 2021c):

Information governance is the overarching and coordinating strategy for all organizational information. It establishes the authorities, supports, processes, capabilities, structures and infrastructure to enable information to be a useful asset and reduced liability to an organization, based on that organization's business requirements and risk tolerance.

The resources relating to information governance include the *Information governance body of knowledge (iGBOK)* (ARMA International, 2018b). This is a comprehensive guide to the field, providing strategic advice, policy guidance and practical advice.

The UK health sector has made information governance a mandatory component of the *Core skills training framework* (NHS Health Education England, 2021) to ensure that all healthcare workers understand the legal and ethical requirements of collecting and using personal information and data. The key learning outcomes include (NHS Health Education England, 2021, p.30):

- Understanding the principles of information governance and the importance of data security
- Understanding the different types and values of information
- Understanding the principles of data security, including how to ensure the confidentiality, integrity and availability of data
- Being aware of the threats to data security and knowing how to avoid them
- Being able to identify data breaches and incidents, and knowing what to report
- Understanding the fundamentals of data protection and the General Data Protection Regulations (GDPR)
- Understanding the principles of confidentiality in services to patients and service users
- Understanding the responsibilities of healthcare organisations under the Freedom of Information Act 2000
- Understanding individual responsibilities in responding to an FOI request.

As noted earlier in the report, health information professionals already make a strong contribution to the information governance structures of the parent organisation (ALIA HLA, 2021). This has been amplified by Ibragimova and Korjonen (2019) who undertook a research project to explore the extent to which European health librarians were involved in evidence and information governance activities, based on a model of clinical and health governance the researchers had developed. The concept of clinical and health governance is described as "an organisation-wide approach to continuous improvement of healthcare quality" (Ibragimova & Korjonen, 2019, p.68) which includes elements of information governance, e.g. the use of information and IT, risk management, policy and strategic direction, and regulation. The study revealed that there was an emerging trend for health librarians to be engaged in their organisation's governance activities, but there was scope for their skillsets to be promoted so that the library could be recognised as a key player in knowledge governance.

Information governance is a cross-disciplinary field: it has even been described as a "super-discipline" (Alberts, 2020, p.1) which draws on an understanding of the fields of law, information technology, records management, security management and business analysis. It has been suggested that work in information governance requires "a new breed of information professional who is competent across these established and quite complex fields" (Smallwood, 2014, p.4). There is a general sense that, as much of information governance work is organisation-specific, many people gain their skills in the workplace. CILIP indicates that the qualifications and experience required by information governance managers could be from a range of fields, e.g. traditional

records management, data management, knowledge management, IT management or business intelligence, plus knowledge of the laws and regulations relevant to an organisation's compliance issues (CILIP, n.d.-b). In the US, the iSchool at San José State University promotes the Master of Archives and Records Management (MARA) as the foundation program for a career in the field of information governance (SJSU, 2021a). Here in Australia, Charles Sturt University offers a subject in the Master of Information Studies, Master of Information Studies (Data Management) and Graduate Certificate in Data Management courses that covers the issues of information governance within the context of data management (CSU, 2021c), while Western Sydney University (WSU) has introduced a Master of Information Governance (WSU, 2021) which includes units drawn from the disciplines of IT, business management and law.

4.7 Artificial intelligence and machine learning

The concept of artificial intelligence has been defined in a report published by CSIRO and Data61 (Hajkowicz et al., 2019, p.2):

> Artificial intelligence (AI) may be defined as a collection of interrelated technologies used to solve problems autonomously and perform tasks to achieve defined objectives, in some cases without explicit guidance from a human being. Subfields of AI include machine learning, computer vision, human language technologies, robotics, knowledge representation and other scientific fields. The power of AI comes from a convergence of technologies.

It goes beyond the scope of this report to discuss the field of AI and its potential impact on human life, on business and industry, or on the natural and built environments, but the topic has relevance for the library and information profession. Prior to the release of the CSIRO Data61 report, a discussion paper was released on the ethical principles associated with the development and implementation of AI (Dawson et al., 2019). ALIA provided a response to the discussion paper and advised that the association would be interested in contributing to further discussions (ALIA, 2019c).

ALIA emphasised that the library and information sector has always been able to adapt to new technologies, noting that "transformation is nothing new for us and we have taken digital transformation into our stride" (ALIA, 2019c, p.1). At the same time, the library and information profession has remained true to "our ethical human-centred values" (p.1) such as equity, fairness, safety, well-being and inclusion. A detailed discussion of professional values and professional ethical practice is presented in Chapter 5 of this report. The opportunities and challenges of AI are recognised by ALIA: "We see AI as a further opportunity to extend and improve our services, tailor our offering to individuals, make our processes more efficient, but we also acknowledge people's fears about the dark side of AI – threats to our personal freedoms and to our physical and digital security" (ALIA, 2019c, p.1).

Eight core principles of AI have been identified (Dawson et al., 2019, p.6):

1. *Generates net benefits*
   The AI system must generate benefits for people that are greater than the costs.
2. *Do no harm*
   Civilian AI systems must not be designed to harm or deceive people and should be implemented in ways that minimise any negative outcomes.

3. *Regulatory and legal compliance*
   The AI system must comply with all relevant international, Australian Local, State/Territory and Federal government obligations, regulations and laws.
4. *Privacy protection*
   Any system, including AI systems, must ensure that people's private data is protected and kept confidential plus prevent data breaches that could cause reputational, psychological, financial, professional or other types of harm.
5. *Fairness*
   The development or use of the AI system must not result in unfair discrimination against, individuals, communities or groups. This requires particular attention to ensure the "training data" is free from bias or characteristics which may cause the algorithm to behave unfairly.
6. *Transparency and Explainability*
   People must be informed when an algorithm is being used that impacts them and they should be provided with information about what information the algorithm uses to make decisions.
7. *Contestability*
   When an algorithm impacts a person there must be an efficient process to allow that person to challenge the use or output of the algorithm.
8. *Accountability*
   People and organisations responsible for the creation and implementation of AI algorithms should be identifiable and accountable for the impacts of that algorithm, even if the impacts are unintended.

While these core principles were supported by ALIA, there was clearly a need for library and information professionals to learn more about the how the principles might apply in the context of library and information services, as well as to share the understanding with library users. Industry standards and best practice guidelines would be important. IFLA has issued a policy statement on libraries and AI in which the key considerations for the use of the technologies in libraries and the responsibilities of those working in the sector are outlined, with strong emphasis place on their ethical responsibilities (IFLA, 2020a).

In a recent research report, CILIP highlights the UK Government's White Paper: *Regulation for the Fourth Industrial Revolution* (HM Government, 2019): the Fourth Industrial Revolution is characterised by "a fusion of technologies – such as artificial intelligence, gene editing and advanced robotics – that is blurring the lines between the physical, digital and biological" (p.7), with the power to disrupt the world as we know it in both positive and negative ways. CILIP's report, *The impact of AI, machine learning, automation and robotics on the information profession* (CILIP, 2021c), endeavours to provide insights into the highly complex issue(s) of AI to consider the opportunities – and challenges – it may hold for the library and information profession. This comprehensive research report includes an overview of the relevance of AI and robotics to the profession, for example in the areas of textual analysis, web search optimisation, or the automation of routine tasks.

The blend of technical and human/social skills required for work in the context of data management also pertains to the context of AI. Digital literacy, literacy and numeracy represent the foundation for the technical skills, but "as AI uptake increases, there will be considerable emphasis on human skills such as creativity, judgement, reasoning, communication and emotional intelligence" (Hajkowicz et al., 2019, p.48). The more pronounced the push for hard technical skills and tools, the greater the demand for soft social skills like teamwork and communication (Börner et al., 2018).

The potential to reposition the library and information professional's competencies by leveraging the interplay of hard skills and soft skills that is required to manage the relations between humans and AI is discussed in the CILIP report (2021c). CILIP underscores the imperative to articulate the relevance of the profession's skills, values and ethical practice to all stakeholders and to explore the use and application of AI tools and to share new understandings with others. It is critical that library and information professionals not only learn about and apply AI technologies in their own work, but also support information users to navigate their changing information landscapes productively and safely.

It is stressed that ways in which AI might be used in library and information services will vary in different contexts. In very general terms, however, the potential applications of AI and robots which are outlined in the CILIP report (2021c) are summarised below:

- Intelligent web and mobile search
  o Includes: personalisation, auto-suggestion, auto-correction, recommendations, voice search
  o Requires 'algorithmic literacy' to understand the algorithmic bias inherent in the functionality of search engines
- AI interfaces to existing information/knowledge/library discovery systems
- AI in knowledge discovery
  o New ways to analyse content, e.g. text mining in the digital humanities, legal research, government resources, systematic reviews
- AI interacting with users
  o New ways to connect, e.g. chatbots, voice assistants (Apple Siri, Google Home, Amazon Alexa)
- AI managing people
  o User management, e.g. data about students' interactions with the library
  o There are significant ethical risks
- AI in Human Resources Management (HRM)
  o Staff management, e.g. assessing job applicants, monitoring engagement, predicting attrition
  o There are significant ethical risks
- AI in marketing and promotion of services
  o More interactive, personalised and targeted engagement with users
- Robotic process automation (RPA)
  o Automating workflows, data entry, data validation, exception reporting, creating alerts in response to suspicious activity
- Smart spaces
  o Sensors to control lighting and heating
  o Providing wayfinding services or reminders to take a study break
  o Contributing to an intelligent campus (Jisc, 2019) or a smart city
- Robots and drones in libraries
  o Automated book storage facilities
  o Book location and placement
  o Learning activities
  o Building maintenance
- User education
  o Integration of AI and data literacy into learning activities.

The introduction of AI into library and information practice inevitably requires an understanding of the 'hype challenge', to be able "to identify where the real benefits of AI lie and so have an informed vision of how they can be implemented to societal need and organisational mission and strategy" (CILIP, 2021c, p.28). CILIP argues that the library and information profession is in a strong position to focus on the ethical issues associated with the use of AI.

It is stressed that, given the wide diversity of information practice in different contexts, the introduction of AI cannot be homogenous. AI applications in legal research will be very different from AI applications in a public library; some applications may be narrow in scope, others may be institution-wide or even sector-wide. IFLA has highlighted the opportunities offered by AI in areas such as content analysis through the semantic web, as well as real time multilingual voice translation through speech recognition, machine translation and speech synthesis (IFLA, 2013, p.27).

IFLA (2020a) indicates that the public library sector is in a strong position to enhance existing digital literacy training offerings by promoting algorithmic literacy, to help users understand how digital processes like algorithms impact on their interactions data, information and knowledge, or by hosting technological makerspaces where people can experiment and learn. Library staff can facilitate community discussions on policy development relating to the desirable and ethical applications of AI in society, as well as supporting members of the community to respond to the shifting employability conditions that are likely to result from the impact of AI and machine learning on the labour market. Some of the innovative initiatives that libraries are already involved in are highlighted (IFLA, 2020a, Annexure iii).

Here in Australia, the National Library and the State and Territory Libraries are already actively involved in AI activities. In its *Strategic plan 2020-2023,* NSLA has advised that the member libraries are increasingly shifting attention "to data science and artificial intelligence (AI) in line with user expectations, and to the ethical dimensions of deploying these" (NSLA, 2020, p.3). The goal is to work with external partners on projects such as using AI for collections access (SLNSW, 2020a; SLQ, 2020b), digital humanities (SLNSW, 2021a) and data science (SLQ, 2020c).

There have been a number of investigations into the use of AI and machine learning in academic libraries (ARL, 2019; Calvert, 2020; Lippincott, 2021; Wheatley & Hervieux, 2019; LIBER, 2020), with some focusing on the issues associated with learning analytics in higher education (Brooke Robertshaw & Asher, 2019; Jones, 2019; Jones & Salo, 2018; Jones et al., 2020; Oakleaf, 2018). Other studies have considered text mining and machine learning in business and law libraries (Anderson & Craiglow, 2017; Baker, 2018; Callister, 2020; Carter, 2018; Faggella, 2020; Kroski, 2020; Neary & Chen, 2017). In the health sciences sector, there is growing interest in the role of AI in the development of systematic reviews (e.g. Beller et al., 2018; Millard et al., 2018; Nagendran et al., 2020; O'Connor et al., 2019).

The focus on the skillsets that are associated with the anticipated uses of AI in the library and information sector is of particular significance to this Technical Report. As a baseline, CILIP considers how some of the existing skills, presented in the PKSB (CILIP, 2021a), might apply in the future world of AI. A number of areas are examined to demonstrate that the application of AI in libraries will be underpinned by the use and adaptation of many of the profession's core skills, such as those that are embodied in the various areas of professional expertise (Element Two of the PKSB), such as Literacies and learning; Collection management, Data management, and Information exploitation and use.

As already noted, soft skills, or generic skills (Element Three of the PKSB), will play a major role, including Leadership, advocacy, influencing and personal effectiveness; Customer focus, service design and marketing; Strategy, planning and management; and Technology and communication. CILIP's ethical framework (Element One of the PKSB) will sit at the heart of professional practice (CILIP, 2021c, pp.33-35):

- Understanding of AI, robots and data
  - Literacies and learning
    - Information and digital literacy
    - Teaching and training skills
    - Supporting users
- Visionary leadership
  - Leadership and advocacy
    - Leadership skills
    - Strategic thinking
    - Evaluation
  - Strategy, planning and management
    - Business planning
  - Customer focus, service design and marketing
    - Communicating with stakeholders
- Collaboration
  - Leadership and advocacy
    - Partnership development
  - Customer focus, service design and marketing
    - Communicating with stakeholders
- Procurement
  - Information governance and compliance
    - Information rights
    - Copyright, intellectual property and licensing
  - Collection management and development
    - Collection building
    - Collection management
  - Strategy, planning and management
    - Contract management
- Data stewardship
  - Organising knowledge and information
    - Cataloguing and resource description
    - Ontologies
    - Metadata
  - Information governance and compliance
    - Data governance
  - Records management and archiving
    - Digitisation, curation and preservation
  - Using and exploiting knowledge and information
    - Data analytics
    - Data visualisation
- Technical infrastructure
  - Organising knowledge and information
    - Information architecture
    - Workflow design

- o Using and exploiting knowledge and information
  - ▪ Information retrieval
- o Knowledge and information management
  - ▪ Data management
- o IT and communication
  - ▪ ICT skills
- Support, training and promotion
  - o Literacies and learning
    - ▪ Teaching and training skills
    - ▪ Supporting users
  - o Customer focus, service design and marketing
    - ▪ Strategic marketing
- Responsible use
  - o Ethics and values
    - ▪ Access to knowledge
    - ▪ Intellectual freedom
    - ▪ Information skills and information literacy
  - o Research ethics.

Data librarianship, discussed above, will naturally be very important. A clear understanding of and experience in data stewardship, data curation, data analysis and data visualisation will be required by the 'data savvy' information professional. Once again, the ability to work across all aspects of the data lifecycle, to apply skills in data description and data organisation and to demonstrate the value of data standards, interoperability and the FAIR principles will be underpinned by a strong commitment to ethical practice.

Regardless of their specific field of practice, it will be important for library and information professionals to be prepared for and proactive about the potential of AI. The concepts of 'computational thinking' and 'computational sense' are presented to describe the positive, future-focused mindset that will be valued. These concepts represent an extension of the notions of 'digital fluency' or 'digital dexterity', described above, to encompass (CILIP, 2021c, p.36):

- Comfort and fluency with computational systems
- Metacognitive skills in learning about new computational resources
- Fluency in incremental tailoring and combining of applications for evolving needs
- A sense of applications as ongoing co-designed artefacts rather than technological givens
- A sense of the feasibility of potential design options.

It is argued that there is no expectation for library and information professionals to become computer scientists (CILIP, 2021c) but they should feel comfortable with technologies, learn to use them quickly, contribute to envisioning their future use, commission and customise systems for local needs, and represent the facilitator between developers' perspectives, organisational objectives and user needs. In an increasingly complex digital environment, it is inevitable that human/cognitive/social skills will be highly valued (Hajkowicz et al., 2019; Semeler et al., 2019). CILIP cites the views of the World Economic Forum (2016) about the skills that will be most needed as AI, machine learning and advanced robotics shape the Fourth Industrial Revolution (CILIP, 2021c, p.37):

- Complex problems solving
- Critical thinking
- Creativity
- People management
- Coordinating with others
- Emotional intelligence
- Judgement and decision making
- Service orientation
- Negotiation
- Cognitive flexibility.

Lippincott (2021) believes that "the skills, experience, and values of librarians, and the persistence of libraries as an institution, will become more important than ever as researchers contend with the data deluge and the ephemerality and fragility of much digital content" (p.5). Internationally, the community Artificial Intelligence for Libraries, Archives and Museums (AI4LAM) maintains a registry of relevant AI activities (AI4LAM, 2021a), coordinates a number of working groups (AI4LAM, 2021b), and hosts a regular conference (AI4LAM, 2021c). The community has an Australian and New Zealand chapter (AI4LAM AU &NZ Chapter), established in 2020, which describes itself as "a network of technologists, tech enthusiasts and the tech curious from across the local libraries, archives, museums and related communities… who are interested in how AI in all its guises shapes our practice and our users' expectations" (AI4LAM, 2021d). In collaboration with NSLA, the chapter hosted a webinar in May 2021 where a group of speakers shared their views about how libraries and librarians are exploring the use of AI technologies in knowledge discovery and enhancing the accessibility of collections (NSLA, 2021a). A series of regular webinars is curated by the University of Adelaide Library (2021).

In the US, "a one-week intensive, interactive, evidence based and applications-oriented professional development program for library and information professionals" is offered by the IDEA Institute on Artificial Institute, where IDEA is an acronym for Innovation, Disruption, Enquiry, Access (IDEA, n.d.-a). The course is funded by the IMLS Laura Bush 21st Century Librarian Program. It is stated on the IDEA website that:

> The purpose of the IDEA Institute is to build and enhance the knowledge and skills of current and future library and information professionals in AI through developing theoretical (conceptual) and practical experiences in a collaborative learning environment. This Institute also aims to build a collective community of AI leaders in which Fellows will bring and share their work experience and professional practice to design, develop, evaluate, and implement AI solutions for their workplaces.

The website provides access to a range of published articles, reports, conference papers and webinars which discuss different AI topics (IDEA, n.d.-b).

IFLA highlights government responsibilities to address policy and regulatory issues associated with privacy and equity, and to ensure that libraries are included in strategic discussions about the development and implementation of AI technologies (IFLA, 2020a). CILIP argues that a whole of sector approach to AI in libraries is warranted, to involve the professional association, library and information services, individual library and information professionals, LIS educators, training providers and researchers (CILIP, 2021c). The recommendations in the report underscore the

importance of learning: CILIP's PKSB should include the skillsets required for working with AI and robots, and CILIP should encourage and support knowledge sharing across the profession. Learning opportunities should be fostered, with libraries becoming models of learning organisations where experimentation and exploration is part of working life. Individual library and information professionals should adopt the 'discovery mindset' (DPMC, 2016, p.ii), "to be inquisitive and willing to explore new technologies" (CILIP, 2021c, p.42). LIS educator and trainers need to understand the relevance of AI to future professional practice and embed the development of 'computational thinking', enquiry-based skills and interpersonal communication competencies into the curriculum and training activities. There is a call for more research in the area to deepen the understanding of "the adoption of AI, the organisational structures that support it and the impact of AI on information, knowledge management and library professional roles" (CILIP, 2021c, p.43).

4.8   Media literacy

The development of information literacy and digital literacy skills has long been an important part of the library and information work, but the roles of library and information professionals in advocating, supporting and enabling information literacy have become more important as people's engagement with information, in all formats, becomes more complex. In 2018, the CILIP Information Literacy Group articulated a fresh definition of 'information literacy': "Information literacy is the ability to think critically and make balanced judgements about any information we find and use. It empowers us as citizens to develop informed views and to engage fully with society" (CILIP Information Literacy Group, 2018). Today's often confusing information environment demands a set of competencies which is commonly referred to as 'media literacy'.

> In the post-truth era, information is harder to trust than ever before. News has become more about entertainment than information and consumers now subscribe to media in order to have their view reinforced and not challenged. The media environment has become more tribal, defining the people who consume it. On top of this environment, the plague that is fake news has descended upon the internet, making truth a relative concept rather than a scientific one. Navigating the media and finding truth in current events has become a confusing process.
>
> (Barton, 2019, p.1024)

The Australian Media Literacy Alliance (AMLA) defines media literacy as "the ability to critically engage with media in all aspects of life" (AMLA, n.d.-a). As our beliefs, attitudes and perceptions are shaped by the media we consume, "knowing what content is truthful, accurate and unbiased is essential for a functioning society" (Banks, 2021). The tools consumers need to be able to evaluate the quality and veracity of information are embedded in media literacy; they help people "to discriminate and evaluate media content, to critically dissect media forms, to investigate media effects and uses, to use media intelligently, and to contrast alternative media" (Kellner & Share, 2007, p.4). The idea of 'critical media literacy', however, goes further, as it allows people to cultivate skills in analysing media codes and conventions, to criticise stereotypes, dominant values and ideologies, and to interpret the multiple meanings presented in text, sound or images.

Cooke and Magee (2019) also consider the implications of information overload, where fake news has carved deep and dangerous divisions in our connected world: "we need to be able to think critically and use all the literacy skills at our disposal" (p.143). Literacy skills cannot be abstractions, but must be acquired and used in context, reflecting deeply on our information consumption,

evaluation and usage. There is an expectation that we are 'metaliterate'. Metaliteracy has been defined as (Mackey & Jacobson, 2014, cited in Cooke and Magee, 2019, pp.143-144):

> Metaliteracy expands the scope of traditional information skills (determine, access, locate, understand, produce and use information) to include the collaborative production and sharing of information in participatory digital environments (collaborate, produce, and share). This approach requires an ongoing adaptation to emerging technologies and an understanding of the critical thinking and reflection required to engage in these spaces as producers, collaborators, and distributors.

Metaliteracy is a pedagogical term that relates to metacognition, i.e. the ability to think about thinking, or to be aware of one's own thinking processes. In engaging with media sources, the metaliterate learner becomes "a critical consumer of information, continuously developing effective questions, verifying sources of information including authorship, and always challenging his or her own biases through metacognitive thinking" (Mackey, 2019, p.1). Beyond this, metaliterate learners comprehend that "the social, political, and economic dimensions of information that often move instantly through mobile and social systems" (Mackey, 2019, p.1).

Sukovic (2016a; 2016b) introduces the notion of 'transliteracy' which she describes as the ability "to use diverse analogue and digital technologies, techniques, modes and protocols" (Sukovic, 2016b). It involves:

- Searching for and working with a variety of resources
- Collaborating and participating in social networking
- Communicating meanings and new meanings by using different tones, genres, modalities and media.

The model of transliteracy that is presented comprises the components of information capabilities, ICT capabilities, communication and collaboration, literacy and numeracy, creativity and critical thinking. As part of the *Skilling the Australian workforce for the digital economy* project, Karanasios et al. (2019) cited a digital literacy framework study undertaken by Iordache, Mariën and Baelden (2017) who discussed the "conceptual confusion" caused by "the convergence between media literacy, transliteracy and digital literacy" (p.9). UNESCO, on the other hand, has reasoned that a "deliberately composite articulation" of media and information literacy (MIL) has resulted in a broad and inclusive description of the concept of MIL (UNESCO, 2020, p.1) which has in turn influenced policy development across the globe. MIL brings together the fields of information, digital and media literacies as "a combined set of competencies (knowledge, skills and attitudes) necessary for life and work in today's world" (UNESCO, 2020, p.1).

Dewey (1916) stated that a well-informed public was vital for democratic society. While the core values of library and information profession will be discussed in Chapter 5 of this report, it is pertinent at this conjecture to consider one of the core values identified by Gorman (2015), 'democracy'. Library and information professionals have the responsibility to (p.37):

- Play our part in maintaining the values of a democratic society
- Participate in the educational process to ensure the educated citizenry that is vital to democracy.

Gorman indicates that democracy requires "a steady flow of information to citizens and for citizens to be knowledgeable about social and political issues" (2015, p.196) and, importantly, IFLA, ALIA and

the ALA all highlight the importance that universal and equitable access to information and ideas is in a democratic society (ALA, 2004; ALIA, 2018; IFLA, 2019b). Malyarov (2021) makes reference to the American Press Institute's (API) depiction of the purpose of journalism, which is "to provide citizens with the information they need to make the possible decisions about their lives, their communities, their societies, and their governments" (API, 2021). Nevertheless, Viner, a journalist with *The Guardian*, stated that the ways in which journalists obtain, report, produce and disseminate the news have changed so dramatically in recent times that deep reflection is required, with a return to the core values of journalism (Viner, 2017). The history of *The Guardian* began in England in 1821 with the launch of the *Manchester Guardian*. In 1921, the then editor of *The Guardian*, C.P. Scott, wrote a centenary essay where he presented his understanding of the core values of his newspaper: honesty, integrity, courage, fairness a sense of duty to the reader and a sense of duty to the community. He also declared "comment is free, but facts are sacred" (Scott, 1921). Another century later, Viner argued that honesty and integrity continued to be powerful values to uphold: "We will give people the facts, because they want and need information they can trust, and we will stick to the facts" because "facts are sacred" (Viner, 2017).

Today, facts are not always sacred, and truth has been disrupted. Barton (2019) has emphasised that "democracy is a useless exercise if citizens do not have access to the truth to make well-informed decisions, and it is made further irrelevant if the truth itself cannot be trusted or verified" (pp.1032-1033). As a result, media literacy has emerged as a foundational skill in democratic societies (Jolls & Johnsen, 2018; Mason et al., 2018) and, as such, is of great relevance to professional practice in library and information services. Malyarov (2021) highlighted the synergistic relationship between media companies and libraries:

> If we can give the masses the tools and trusted information that helps them separate truth from lies and make informed decisions about their role in society, we not only improve media literacy, we elevate trust in traditional media back to where it used to be – above everything else. And the place to find the masses is… drum roll, please… libraries!

In Australia, media organisations and libraries have come together, joined by archives, museums and higher education institutions, to lead the debate about media literacy and to advocate for a media literate society. The Australian Media Literacy Alliance (AMLA) includes:

- ALIA
- ABC Education (ABC)
- Museum of Australian Democracy (MoAD)
- National Film and Sound Archive (NFSA)
- National and State Libraries Australia (NSLA)
- Queensland University of Technology (QUT), Digital Media Research Centre
- Western Sydney University (WSU).

Collectively, these organisations are able to bring together insights into content creation, information provision, education, and media and information usage (AMLA, n.d.-b), which reflects UNESCO's recommendation for a joined-up approach to media literacy through "a practical convergence where journalists, information/library specialists, educators – among others – and their related activities meet" (UNESCO, n.d., p.6). These converging interests are reflected in the principles presented in the *Media Literacy Framework* published by the UK Department for Digital, Culture, Media & Sport (DCMS) as part of the *Online Media Literacy Strategy* (DCMS, 2021, p. 23):

- Principle 1: Data and privacy
    - Users should understand the risks of sharing personal data online, how that data can be used by others, and are able to take action to protect their privacy online
- Principle 2: Online environment
    - Users should understand how the online environment operates and use this to inform decisions online
- Principle 3: Information consumption
    - Users should understand how online content is generated, and be able to critically analyse the content they consume
- Principle 4: Online consequence
    - Users should understand that actions online have consequences offline, and use this understanding in their online interactions
- Principle 5: Online engagement
    - Users are able to participate in online engagement and contribute to making the online environment positive, whilst understanding the risks of engaging with others.

While the 'user' sits at the centre of each of these principles, DCMS stresses that media literacy is a shared responsibility: "organisations within the media literacy sector, such as news organisations, civil society, education institutions and regulators also have a role in promoting media literacy to users" (DCMS, 2021, p.22). In the framework document, the principles are discussed in greater detail from the angles of user knowledge, user skills and the expectations for content producers and media organisations.

In response to the call for a coordinated approach to online media literacy, the Media and Information Literacy Alliance (MILA) was established in the UK in mid-2021 by CILIP and the CILIP Information Literacy Group, with the goal of developing "a cross-sector group of organisations and individuals who share a common belief in the power of media and information literacy to help people lead happier, healthier, safer and more productive lives" (MILA, 2021). MILA will offer a platform for knowledge exchange and collaboration, with core activities focusing on advocacy (especially in terms of public and media relations, capacity building, research, and the delivery of diverse programmes.

Here in Australia, the *Media Literacy Framework* developed by AMLA explains that media literacy underpins multiple aspects of contemporary human life (AMLA, n.d.-c, p.1):

- To receive, verify and share information
- To get help and advice when it is needed
- To conduct business and find work
- To learn and study
- To participate in communities
- To engage with our democracy
- To meet people, relax and be entertained
- To share ideas, knowledge, experiences and opinions
- Creating engaging and effective media.

It is noteworthy that, as the work of library and information professionals embraces many of these aspects of life, media literacy is indeed a core skill.

The AMLA framework presents a group of key concepts which represent "a set of lenses through which investigate the media" (AMLA, n.d.-c, p.1) and a set of ten competencies required by a media literate citizen. The key concepts state that a media literate citizen (AMLA, n.d.-c, p.2):

- Uses a variety of technologies for media consumption and production, with awareness of the personal, social and ethical impact of their choices
- Engages with media representations with an understanding of how processes of selection and construction have been used to create stories according to particular points of view
- Recognises their own role as an audience member across multiple media forms, and the processes used by media producers to invite particular consumption practices
- Understands that economic, social and ethical processes inform the production, distribution and regulation of media content
- Uses and critiques media languages in images, sounds and text to communicate and analyse how meaning is constructed across multiple media forms
- Is aware and critiques the various kinds of relationships that can be formed within and with various media forms.

These ideas represent the conceptual frame for the competencies of media literacy (AMLA, n.d.-c, p.2):

A media literate citizen:
Reflects
1. Reflects on their own media use
2. Is curious about how media are made
Understands
3. Knows that media influence and impact people and society
4. Knows that a range of institutions impact media preparation
5. Understands that the media construct versions of reality
Uses
6. Uses technologies to consume and produce media
7. Can use and critique a variety of media formats
8. Communicates using the language conventions of a variety of media forms
Achieves
9. Successfully manages personal, social and public relationships using media
10. Confidently achieves personal objectives and goals through media.

In contrast to these overarching areas of media literacy citizenship, the user skills that are listed in the DCMS framework are highly pragmatic (DCMS, 2021):

- Principle 1: Data and privacy
  - Users are able to review and change their privacy settings
  - Users are able to take down their own content
  - Parents can utilise parental control tools to ensure children are accessing age-appropriate content
  - Users are able to control who has access to their data
- Principle 2: Online environment
  - Users have the digital skills to access and navigate the online environment
  - Users identify sponsored content and advertisements online
  - Users identify filter bubbles and echo chambers in their own online environments
  - Users take action to become informed about other points of view

- Principle 3: Information consumption
  - Users are able to critically analyse online information
  - Users are able to fact-check information and determine its veracity
  - Users rebut or report false content
  - Users are able to identify misleading or doctored images
  - Users assess the reliability of a source of information
  - Users are able to differentiate between fact, opinion and satire
- Principle 4: Online consequences
  - Users are able to identify unwanted or hateful content
  - Users speak out about unwanted and hateful content witnessed online
  - Users are able to report content across a number of platforms
  - Users self-regulate screen time
  - Users are able to filter out unwanted or hateful behaviour from online environments
  - Users can safely seek help online or offline if experiencing unwanted or hateful content
- Principle 5: Online engagement
  - Users have the digital skills used to create content online
  - Users engage in online conversations, including democratic debate
  - Users identify suspicious and dangerous situations online and take action to keep themselves safe
  - Users safely seek help if needed
  - Users are able to control the online friends or followers who see content generated by the user
  - Users are able to partake in online debate without exhibiting abusive or harmful behaviour
  - Users are able to adjust online behaviour to protect and support mental health.

AMLA has recently released a report, *Towards a national strategy for media literacy* (AMLA, 2021a) which stresses the imperative for a national, collaborative approach to developing a media literate society: "there is an urgent need to make Media Literacy a priority for all Australians" (AMLA, 2021a, p.4). Media Literacy Week in Australia is part of an international initiative, Global Media and Information Literacy Week, which aims to raise awareness about media literacy and to advocate for a media literate society. Members of AMLA play leading roles in the events and activities during Media Literacy Week.

In terms of building on existing infrastructure, schools and libraries have been identified as critical players that "should be leveraged as frontline responses to Media Literacy" (AMLA, 2021a, p.20). While the formative development of media literacy happens in the school learning environment, libraries have a significant contribution to make in the vocational education, higher education and lifelong learning contexts.

Banks (2021) also described library and information professionals as being on the frontlines of the fight for higher levels of media literacy in all areas of the community. One research participant in the AMLA consultation activities believed that "library networks are the coalface of access and training with the web and media" (AMLA, 2021a, p.20). In the US, the ALA has published a guide for library practitioners about how to best help members of the community develop media literacy skills (ALA, 2020). The guide offers ideas about how to integrate media literacy skills development into a range of activities, e.g. the reference interaction, existing library programs and presentations, or more general information skills training.

Most of the discussion on media literacy skills considers the needs of "every adult" (DCMS, 2021, p.92), "all citizens" (Jolls & Johnsen, 2018, p.1379; UNESCO, n.d., p.1), "all Australians" (AMLA, 2021a, p.4) or "every Australian" (AMLA, 2021b, p.1). Librarians clearly play a significant role in the development of the media literacy skills of their patrons or users, but what about the librarians' own media literacy skills? The ALA warns that "before library workers can effectively teach media literacy skills to patrons, they need to have a solid grasp of the concepts" (ALA, 2020, p.7).

Media literacy is included in several skills frameworks discussed in this report: the PKSB (CILIP, 2021a), the *Skills framework for Victorian public libraries* (SLV, 2014b, Appendix 3) and CAUL's *Digital dexterity framework* (CAUL, 2020). The CAUL framework encapsulates many of the skillsets presented in the DCMS (2021a) document, with an additional layer of personal attributes that support effective media literacy practice, for example adaptability, cognitive flexibility, communication, confidence, creativity, critical thinking, judgement and decision making, self-direction, self-reflection, versatility and willing lifelong learner. It presents "the skills and capabilities that students will need to succeed in the workforce of the future" (CAUL, 2020, p.1), but as digital dexterity is viewed as "a critical component in the success of digital societies" (CAUL, 2020, p.1), there is an underlying assumption that the skills and capabilities apply to the library and information profession as well. Currently, however, there are no examples of media literacy skills frameworks for library and information professionals.

The plan of action for UNESCO's MIL framework proposed that training schemes for librarians, as one group of engaged professionals, should be developed (UNESCO, n.d., p.10), supported by strategies and tools "to enable traditional information and library specialists… to consider upgrading their competencies on aspects of MIL for which they do not have expertise" (UNESCO, n.d., p.11). It was also proposed that media and information literacy competency standards for information and library scientists, journalists and professionals should be developed, based on the UNESCO Global MIL Assessment Framework (UNESCO, 2013b). Unfortunately, to date, these initiatives have not materialised. It appears that, without any formal media literacy frameworks or tailored training programs, library and information professionals need to independently develop their own understanding of the imperative for media literacy and the challenges presented by contemporary online media channels. Undertaking a critical assessment of their own media literacy skills, as listed in the DCMS framework discussed earlier DCMS, 2021), could be a good starting point for individuals or teams working in the library and information sector.

As a strategy to address the lack of formal training programs, ALIA has recently entered into a partnership with the News and Media Research team at the University of Canberra to undertake research into the attitudes, needs and perceptions of library and information services staff about fake news, misinformation and media literacy (ALIA, 2021d). Findings from the research will inform the development of both a professional development program and a suite of tools to support media literacy skills development in libraries. IFLA's Information Literacy Section and the School Libraries Section collaborated to deliver a webinar on *Educators' education and training on information literacy* to explore education and training pathways for library staff working in the area of information and media literacy.

Media literacy has also been the focus for several professional development events in this country: in September 2020, ALIA hosted an online conference entitled *True or false? Media literacy for capable, confident, critical thinkers* and in 2019, 2020 and 2021, the School Library Association of

Victoria (SLAV) ran masterclasses on media literacy and critical thinking topics. Mackey (2019) has argued that, in the current post-truth information climate, "it is important to build on the trust and reliability already garnered by the library and to stand by the core values and mission that ultimately drive action in a truly democratic society" (p.11).

4.9   Cultural competency

Cultural competence, or cultural competency, refers to the ability to understand the ability of professionals to understand the needs of diverse populations: "the ability to understand and respect cultural differences and to address issues of disparity among diverse populations competently" (Overall, 2009, p.176). The term 'cultural competency' is used within the library and information profession in relation to the broad notion of cross-cultural contexts. In the US, the Association of College and Research Libraries (ACRL) has published a set of standards, *Diversity standards: Cultural competency for academic libraries* (ACRL, 2012). In these standards, ACRL draws on the definition of 'cultural competence' provided by the National Association of Social Workers (NASW) (2001):

> A congruent set of behaviors, attitudes, and policies that enable a person or group to work effectively in cross-cultural situations; the process by which individuals and systems respond respectfully and effectively to people of all cultures, languages, classes, races, ethnic backgrounds, religions, and other diversity factors in a manner that recognizes, affirms, and values the worth of individuals, families, and communities and protects and preserves the dignity of each.

This definition has been subsequently revised (NASW, 2015), but the original definition remains the one used by ACRL in the standards document. Blackburn (2015) investigated the emergence and application of cultural competence in library and information science in the US, outlining how cultural competence has been incorporated into policy, education and practice. The wording of the underpinning definition of cultural competence used by Blackburn was based on the NASW definition, but adapted for the library profession (Overall, 2009):

> … the ability to recognise the significance of culture in one's own life and in the lives of others; to come to know and respect diverse cultural backgrounds and characteristics through interaction with individuals from diverse linguistic, cultural and socio-economic groups; and to fully integrate the culture of diverse groups into service work and institutions in order to enhance the lives of those being serviced by the library profession and those engaged in service.

The implementation of cultural competence in the US is discussed from the perspectives of LIS education, organisational development and library services. Cultural competence has been included in the ALA's MLIS course accreditation standards since 2008, with the goal of fostering an environment which reflects "the values and concerns of more groups than the dominant one" (Blackburn, 2015, p.183), resulting in future cohorts of more diverse students. The challenges of providing library services to diverse cultures are acknowledged, as the approaches to information provision and knowledge construction commonly used in the LIS sector differ greatly from those used in other cultures. To become a culturally competent organisation, managers and staff need to have a clear understanding of and a commitment to the values, principles, policies and behaviours that enable effective cross-cultural activities, supported by an appreciation of 'difference' and of adaption to the cultural contexts of the communities served (Blackburn, 2015).

The School of Information at San José State University (SJSU), California, regularly monitors job postings across the country. The most recent SJSU study, released in mid-2021, covered 400 LIS jobs advertised in all 50 states and Washington, D.C. The advertisements were primarily for academic libraries and public libraries, but there were also employment opportunities in the corporate sector, government, school libraries, health and law libraries (SJSU, 2021c, p.9). The study underscores the rich variety of knowledge and skills required in different fields and different roles within the broader information environment. Significantly, the skills required to advance diversity, equity and inclusion (DEI) were identified as a key area of professional practice where there were expanding opportunities.

The degree of cultural reflection on inequities in society has led to a deeper exploration of DEI, and employers are asking job applicants "think intentionally about what it means to serve diverse and historically excluded communities", to articulate their commitment to "advancing equity, inclusion, structural change, and anti-racism (EISCA)" and to describe the ways in which their work behaviours and practices could help contribute to positive solutions to DEI issues in the library in order to "improve information access to an ever-changing and growing user community and meet the needs of historically excluded groups" (SJSU, 2021c, p.7). Applicants for positions in library and information services require the skills to not just recognise, but "specifically to put action into place to incorporate the differences, complexities, and opportunities that diversity brings to an organization" (SJSU, 2021c, p.13).

Indigenous cultural competence: International perspectives

The issues relating to cultural competency are of particular significance in regions with longstanding communities, histories and cultures of First Peoples, including, but not limited to Canada, New Zealand and Australia. The first International Indigenous Librarians' Forum (IILF) was held in Auckland, New Zealand in 1999 with the vision to affirm "the knowledge and values of indigenous peoples in the age of information" (Roy, 2000). The idea of the Forum grew from the professional interactions between members of the American Indian Library Association (AILA) and the Māori Library and Information Workers' Association during the preceding years. The outcomes from the five-day meeting included the commitment to continue contact between the international representatives and to plan for the next Forum two years' later, to be held in Sweden.

A vision statement was drafted to affirm the purpose and future of the Forum: "We, as unified indigenous people who work with libraries and information, will ensure the appropriate care, development and management of the indigenous knowledge of generations past, present and future" (Sullivan, 2001, p.8). Five audiences were identified which would play an important role in furthering indigenous librarianship (Roy, 2000):

- Local indigenous peoples and their governing bodies
- Professional organisations within the field of library and information science, including those involved in indigenous librarianship, as well as regional, national and international organisations
- Local, state, regional and national libraries and information service centres
- Government agencies
- Potential funding sources and other organisations involved in similar endeavours.

Roy (2000) reflected that the IILF validated the roles played by indigenous library and information professionals:

> The profession would benefit by creating spaces for indigenous knowledge and input. Libraries and library workers can be at the center, not only of the knowledge industry, but also of a knowledge transfer cycle that respects and is reflective of indigenous patterns of acquiring, preserving, and sharing information. The workplace can provide cultural fulfillment for both indigenous clients and indigenous librarians.

Since this inaugural event, the IILF has been held every two years in different locations (Sweden, US, Canada, Australia and New Zealand), providing opportunities to explore "the significant issues facing libraries and institutions that care for indigenous and cultural information" (Te Rōpū Whakahau, 2019). The core themes for the IILF include "issues of indigenous sovereignty and self-determination over how information/knowledge and in particular how indigenous information/knowledge is collected, maintained and disseminated alongside an overriding recognition of the importance of indigenous/native language in all aspects of indigenous autonomy" (Te Rōpū Whakahau, 2019).

Within the IFLA community, the Special Interest Group (SIG) on Indigenous Matters was formally established in December 2008 (IFLA SIG on Indigenous Matters, 2012). The SIG subsequently achieved IFLA Section status in January 2016 (IFLA Indigenous Matters Section, 2017). The Section's primary role is (IFLA Indigenous Matters Section, 2021) :

> …to support the provision of culturally responsive and effective services to indigenous communities throughout the world. Its main objectives are to promote international cooperation in the fields of library, culture, knowledge and information services to indigenous communities that meet their intergenerational, community, cultural and language needs, and to encourage indigenous leadership within the sector, exchange of experience, education and training, and research in all aspects of this subject.

In New Zealand, LIANZA has a Body of Knowledge (BOK) which focuses on the library and information professional's awareness of Indigenous (Māori) knowledge paradigms, recognising that "knowledge that is created within an Indigenous context is quite different from Western traditions" (LIANZA, 2021a). This BOK encompasses:

- Understanding the importance, diversity or structure of Māori knowledge (mātauranga Māori)
- Understanding the influence that Māori processes, philosophies and language (kaupapa, tikana and te reo Māori) are intrinsic in Māori knowledge frameworks
- Understanding the importance of Māori research methodologies when assisting clients with their needs.

The BOK documentation provides guidance about the values of kaupapa Māori (LIANZA, 2021a):

- Taonga (*treasure, property, prized and protected as sacred possessions*)
  Understanding the place of taonga tuku iho (the prized and sacred possessions that are handed down from one generation to the next) in contributing to the survival of Māori as a people
- Whakatupu mātauranga *(creating knowledge, new knowledge)*
  Affirming creative activity to enhance the information and recreational needs of clients

- Manaakitanga *(Mana-enhancing behaviour towards each other, where mana is equated with influence, prestige, power)*
  Committing to giving care and respect to clients, the organisation, and the taonga that they hold
- Te Reo Māori *(the Māori language)*
  Understanding that te reo Māori is vital to the identity and survival of Māori as a people. Recognising that competence in te reo Māori has intrinsic value to the client, organisation and staff
- Whakapapa *(Tacit and explicit knowledge frameworks)*
  Recognising whakapapa is the backbone of Māori society. Recognising whakapapa represents the growth of knowledge. Recognising all things are connected, both animate and inanimate. Recognising collections (as in libraries) have direct links to an original source. Recognising whakapapa is the layering towards both the future and the past
- Kaitiakitanga *(Preserving, maintaining and protecting all knowledge)*
  Practising at all times the five-way test for eligibility to be a recipient of restricted knowledge. The five-way test consists of: Receiving information with the utmost accuracy, storing the information with integrity beyond doubt, retrieving the information without amendment, applying appropriate judgement in the use of the information, passing on the information appropriately
- Rangatiratanga (*Acknowledging the attributes of others*)
  Demonstrating the ability to lead and unite people, and demonstrating the ability to recognise the potential of others.

Oxborrow, Goulding and Lilley (2017) emphasise that, historically, libraries and information organisations in New Zealand were generally based on western cultural ideals, with knowledge transmitted through written texts and librarians seen as "guardian or gatekeepers of that knowledge". Māori knowledge, or mātauranga Māori, has "a more holistic, all-encompassing perspective" which "incorporates cultural knowledge such as tikanga (the customary system of values and practices that have developed over time and are deeply embedded in the social context" (Oxborrow et al., 2017). Oxborrow's own academic research focuses on how non-Māori librarians learn about or engage with (make sense of) mātauranga Māori (Oxborrow, 2020).

The data collected in interviews and focus groups revealed that there continued to be a "lack of external impetus for non-Māori librarians to engage with mātauranga Māori within their professional contexts" (Oxborrow, 2020, p.iii). Te Rōpū Whakahau, the national body that represents Māori engaged in libraries, coordinates a two-day workshop, Mātauranga Māori within New Zealand Libraries, which guides participants through learning about the importance, diversity and structure of Māori knowledge frameworks, the influence of language (Te Reo Māori) and culture (tikanga) in the development of Māori knowledge constructs and principles, the importance of kaupapa Māori methodologies in supporting the research needs of Māori clients, and the relevance of Te Tiriti o Waitangi to the development and delivery of library and information services (Te Rōpū Whakahau, 2021). The workshop fulfils the requirements of LIANZA's BOK11, Indigenous (Māori) knowledge paradigms. Although the inclusion of mātauranga Māori in LIANZA's BOK was viewed as significant by the research participants, it was found that the association's Professional Recognition process did not actually play "a major role in encouraging non-Māori librarians to engage with mātauranga Māori in a meaningful way" (Oxborrow, 2020, p.iii).

The research findings indicated that "it was internal factors that really seemed to make the most difference in terms of what helped or hindered non-Māori librarians in their efforts to learn about or engage with mātauranga Māori" (Oxborrow, 2020, p.294). The critical factors included the importance of linguistic and cultural engagement (Te Reo Māori and tikanga), personal initiative and perseverance, as well as an ethical understanding of social and cultural privilege. While the theme of professional values and ethics is examined in detail in Chapter 5 of this report, it is important to note the core principles of librarianship which is described as "an ethical activity embodying a value-rich approach to professional work with information" (IFLA, 2012a). IFLA's code of ethics includes a statement on the profession's responsibilities towards individuals and society (IFLA, 2012b):

> In order to promote inclusion and eradicate discrimination, librarians and other information workers ensure that the right of accessing information is not denied and that equitable services are provided whatever their age, citizenship, political belief, physical or mental ability, gender identity heritage, education, income, immigration and asylum-seeking status, marital status, origin, race, language, religion or sexual orientation.
> To enhance access for all, librarians:
> * Support people in their information searching
> * Assist them with their reading skills and information literacy
> * Encourage them in the ethical use of information (with particular attention to the welfare of young people).

The professional responsibility for fairness and respect in relationships with colleagues and employers/employees is also stressed. Oxborrow (2020) believes that a profession-wide discussion on the ethical principles that underpin cultural competence is required.

LIANZA has a policy, *Library and information services to Pacific peoples* (LIANZA, 2013b) which focuses on the importance of meeting the information and learning needs of Pasifika communities in New Zealand. The LIANZA Pasifika Information Management Network (PIMN SIG) is a professional community that supports library and information professionals to "contribute to the enhancement of Pasifika people's lives by delivering services and collections that are easily accessible, current, meaningful, and relevant to their development and contribution to society" (LIANZA, 2021b). Members of the PIMN SIG come from across the country and the Pacific Islands region, sharing information, ideas, experiences and expertise about library and information issues, such as Pasifika research, resources and library services, as well as networking and supporting the professional needs of people working in the field. In May 2021, LIANZA was proud to announce the election of the association's first Pasifika President (Libraries Aotearoa, 2021).

In Canada, the Committee of Indigenous Matters of the Canadian Federation of Library Associations - Fédération Canadienne des Associations de Bibliothèques (CFLA-FCAB) is charges with working with First Nations, Métis and Inuit peoples "to address issues related to libraries, archives and cultural memory institutions; to promote initiatives in all types of libraries by advancing and implementing meaningful reconciliation as addressed by the Truth and Reconciliation Commission report and in the Calls to Action; to implement the recommendations of the Truth and Reconciliation Commission report to monitor ongoing progress in these areas; and to promote collaboration in these issues across Canadian libraries, archives, and cultural memory institutions" (CFLA-FCAB, n.d.-a), The Truth and Reconciliation Commission documents are available on the National Centre for Truth and Reconciliation (NCTR) website hosted by the University of Manitoba (NTRC, 2021).

The work activities of the Indigenous Matters Committee are presented graphically through the adaptation of the medicine wheel, with Indigenous knowledge, language and cultural memory representing the centre of the wheel. The Committee is responsible for a number of resources, including:

- First Nations, Métis and Inuit Indigenous ontology
- Indigenous languages event guide
- IBBY *From Sea to Sea to Sea* Indigenous picture books list
- *Living bibliography of selected material* about Indigenous knowledge, archives, libraries, and research ethics and protocols (Canadian and international) (CFLA-FCAB, n.d.-b).

The Indigenous Matters Committee also provides links to a MOOC, *Indigenous Canada*, developed by the Faculty of Native Studies at the University of Alberta. The course "explores key issues facing Indigenous peoples today from a historical and critical perspective, highlighting national and local Indigenous-settler relations" (University of Alberta, 2021). The University of British Columbia (UBC) offers an online learning program, *Reconciliation through Indigenous education*, which helps students "envision how Indigenous histories, perspectives, worldviews, and approaches to learning can be made part of the work we do in classrooms, organizations, communities, and our everyday experiences in ways that are thoughtful and respectful" (UBC, 2021a).

Since 1998, UBC's School of Information (iSchool) (formerly School of Library, Archival and Information Studies (LAIS)) has offered a First Nations curriculum concentration in the Master of MLIS and Master of Archival Studies (MAS) degree programs (Nathan & Perreault, 2018; UBC, 2021b). Students focus on Indigenous information initiatives and systems, including language preservation, digitisation, records management, community research and First Nations governance, and gain practical experience through placements with Indigenous communities and cultural memory institutions. In the conclusion to their article, Nathan and Perreault (2018) underscore the value of their work at UBC (p.85):

> The creation of a body of research and scholarship in the area of Indigenous curricular design and implementation contributes to the growing need for accessible examples that others who teach in classrooms within LAIS programs can draw upon and develop further. As this field of pedagogical inquiry expands, we hope that through examining our practice and revisiting forces that inform it (e.g., race, power structures, colonial legacies, and contradictory paradigms) we can create more spaces where these issues can be articulated and addressed.

Lilley (2021) highlights the value of adding Indigenous content, taught by Indigenous faculty members, to academic programs in library and information science, to ensure that students recognise the importance and legitimacy of Indigenous knowledges, plus the associated services and resources that are required for access and use. Close relationships with local Indigenous communities will naturally be required contribute to achieve positive and productive learning outcomes.

Indigenous cultural competence: Australian perspectives

In late 2004, the State Library of New South Wales and Jumbunna Indigenous House of Learning, University of Technology Sydney (UTS), co-hosted the *Libraries and Indigenous Knowledge* colloquium. The two-day forum brought together members of the practitioners, academics and policy makers to explore and discuss the complex issues that sit at the intersection between Indigenous knowledge systems and the library and information sector. In the introduction to the collected papers, Nakata and

Langton (2005) invite their readers to take away "an appreciation and understanding of the complexities that library, archives and information professionals must engage with in meeting the needs of Indigenous people and managing Indigenous knowledge within their organisations" (p.3). To develop an understanding of the complexities requires information professionals to be prepared for "an unsettling of established practice, and the questioning of some of the assumptions on which accepted practice rests" in order to open their minds to the importance and value the principles of Indigenous culture and Indigenous knowledge management (Nakata & Langton, 2005, p.3). The forum itself and the ideas shared in the papers represent the call to action for library and information professionals to increase their awareness of Indigenous people's information needs and to transform their practice (K. Thorpe, personal communication, January 14, 2022).

In Australia, the National Centre for Cultural Competence (NCCC) is a teaching and research unit at the University of Sydney. The concept of cultural competence has been interpreted for the Australian context (NCCC, 2021a):

> Cultural competence is the ability to participate ethically and effectively in personal and professional intercultural settings. It requires being aware of one's own cultural values and world view and their implications for making respectful, reflective and reasoned choices, including the capacity to imagine and collaborate across cultural boundaries.

> Cultural competence is, ultimately, about valuing diversity for the richness and creativity it brings to society. We introduce and explore the concepts from the standpoint of Aboriginal and Torres Strait Islander cultures as a first step. The program will be expanded to fully embrace the cultural diversity of the University, our region and the wider international community… Acquiring the knowledge, skills and experience necessary to operate effectively and ethically in multicultural environments is crucial.

The NCCC offers face-to-face workshops, as well as some online resources, such as the MOOC, *Cultural competence - Aboriginal Sydney* (NCCC, 2021b). Links are provided to a range of informative resources on the core concepts of cultural competence, seminal works that have informed and shaped the contemporary discourse, key frameworks for universities and healthcare organisations. The interactive workshop program covers the building blocks of cultural competence, drawing on the need for critical self-reflection to be able to understand personal cultures, values and identities as well as privileges and biases. Course participants consider the complex issues of racism, privilege and oppression in Australia, at both the individual and institutional levels. Teaching staff are introduced to the pedagogical dimensions of cultural competence to confidently include disciplinary-relevant themes into the curriculum and to facilitate increased student engagement in learning (NCCC, 2021c). Cultural competence is one of the nine graduate qualities which, since 2018, should be embedded in the academic courses (University of Sydney, 2020):

> Cultural Competence is the ability to actively, ethically, respectfully, and successfully engage across and between cultures. In the Australian context, this includes and celebrates Aboriginal and Torres Strait Islander cultures, knowledge systems, and a mature understanding of contemporary issues.

Charles Sturt University (CSU) has adopted a whole-of-institution approach to cultural competence which has involved increasing the university's engagement with Indigenous communities, Indigenisation of the curriculum, support for Indigenous students and building the capabilities of Indigenous and non-Indigenous

staff (CSU, 2021d). A pedagogical framework guides the inclusion of Indigenous content and cultural competence strategies, with oversight from the university's Indigenous Board of Studies (CSU, 2021e). Strategies for Indigenisation of the curriculum are mapped across the student learning journey and the progressive development of critical reflective practice. The maturity model presented (Table 36) moves from a baseline of 'cultural incompetence' to the achievement of 'cultural proficiency' (CSU, 2021f):

Table 36: Cultural competency maturity model
(CSU, 2021e, adapted from Nolan & McConnochie, 2008)

Cultural incompetence	Cultural knowledge	Cultural awareness	Cultural sensitivity	Cultural competence	Cultural proficiency

Universities Australia (UA) partnered with the National Aboriginal and Torres Strait Islanders Higher Education Consortium (NATSIHEC) to develop and *Indigenous Strategy 2017-2020* (UA, 2017) and has regularly monitored progress towards the achievement of the strategic aims (UA, 2021). The key goals relate to improving Indigenous student enrolment, retention and success rates, improving staff outcomes, increasing the engagement of non-Indigenous people with Indigenous knowledge, culture and educational approaches. The strategy, which strives to establish common goals for the Australian higher education sector, built on a number of earlier focused activities, including the *National best practice framework for Indigenous cultural competency in Australian universities* (UA, 2011a). This framework was developed as part of the *Indigenous cultural competency project in Australian universities* (UA, 2009). The guiding principles for the framework include (UA, 2011b):

- Indigenous people should be actively involved in university governance and management
- All graduates of Australian universities should be culturally competent
- University research should be conducted in a culturally competent way which empowers Indigenous participants and encourages collaborations with Indigenous communities
- Indigenous staffing will be increased at all appointment levels and, for academic staff, across a wider variety of academic fields
- Universities will operate in partnership with their Indigenous communities and will help disseminate culturally competent practices in the wider community.

It was disappointing to note that, a decade ago, in these major strategic initiatives focusing on cultural competence, Indigenous knowledge systems and support for Indigenous students and staff, libraries, and library and information professionals, were to all extents and purposes invisible. While they were not directly discussed in the report, the extensive list of resources (104 pages) does include a reference to the ATSILIRN (Aboriginal and Torres Strait Islander Library, Information and Resources Network) *Aboriginal and Torres Strait Islander protocols for libraries, archives and information services*. Originally published by ALIA in 1995, the protocols were revised and updated in 2012 (ATSILIRN, 2012a).

ATSILIRN was established in 1993 in response to the need for an information and support network for Aboriginal and Torres Strait Island peoples working in the library and information sector. ATSILIRN aims to support Aboriginal and Torres Strait Islander peoples working in libraries, archives, and information services, as well as non-Indigenous people who provide library, archives and information services to Aboriginal and Torres Strait Islander peoples. The network seeks to help educate (ATSILIRN, 2012b):

- Aboriginal and Torres Strait Islander peoples about what is happening in libraries, archives and information and resource services
- the wider community about the library, archive and information needs of Aboriginal and Torres Strait Islander peoples
- those people who are in positions to effect changes to how library, archive, information and resource services are provided to Aboriginal and Torres Strait Islander peoples.

The primary activity for ATSILIRN has been to develop the protocols which "guide libraries, archives and information services in appropriate ways to interact with Aboriginal and Torres Strait Islander peoples in the communities which the organisations serve, and to handle materials with Aboriginal and Torres Strait Islander content" (ATSILIRN, 2012b). The ATSILIRN protocols pertain to 12 areas of professional practice (ATSILIRN, 2012a):

- Governance and management
- Content and perspectives
- Intellectual property
- Accessibility and use
- Description and classification
- Secret and sacred materials
- Materials that may be offensive
- Staffing
- Developing professional practice
- Awareness of Aboriginal and Torres Strait Islander perspectives
- Copying and repatriation of records
- The digital environment.

The protocols are not designed to be prescriptive, but should be adopted and adapted to suit individual information settings.

Garwood-Houng and Blackburn (2014) prepared a detailed review of the protocols to interpret their significance to library, information and archival practice. They describe them as "a toolbox, containing tools to assist in, for example, weeding a collection while retaining adequate numbers and types of items with Aboriginal or Torres Strait Islander content, building relationships with a local community, developing professional practice, or promoting opportunities for cross cultural understanding among all patrons" (p.7). Importantly, the authors highlight the increasing relevancy of the protocols, due to the shifting community attitudes to Indigenous languages, history, culture and knowledge. The value of the document lies in the fact that the principles underpinning the protocols remain valid, despite the ever-evolving socio-cultural contexts and the rapidly changing information environment. When social media tools were piloted at the State Library of New South Wales (SLNSW), the ATSILIRN protocols were adopted to support engagement with Indigenous communities as well as informing the strategies employed to share Indigenous materials in digital formats with the wider community (Thorpe & Joseph, 2015). To facilitate ways in which Indigenous people could be "connected, engaged, represented within the Library, its collections and services" (Thorpe & Joseph, 2015, p.4.), the protocols were applied in four areas of activity:

- Developing markets (audiences) and promoting Library events, exhibitions, products collections and services
- Promoting discovery of library assets (including collections, services, events, exhibitions, online services, physical spaces and staff expertise)

- Engaging with clients and the community in their preferred channels and online communities (for conversations and for service delivery)
- Collecting social media content for the collection (including social metadata and community-created content.

Thorpe & Joseph (2015) present clear, illustrative examples about the advantages, as well as the cultural sensitivities, that were encountered during the pilot project. The value of the protocols "for informal professional development in supporting the development of skills in appropriate provision for and about Aboriginal and Torres Strait Islander people" has also been recognised (Garwood-Houng & Blackburn, 2014, p.4). The protocols that pertain to developing professional practice are, of course, outlined in the document.

It is evident that the ATSILIRN protocols represent a strong foundation for the Indigenous cultural competency required by library and information professionals here in Australia, and more widely in the international library community. The protocols are explored in detail in the online learning module, *Indigenous recordkeeping and archives*, offered by the ASA (2022). The program provides archivists and archival institutions with a toolkit to help them understand the specific requirements in managing Indigenous records and archival materials. The ATSILIRN protocols are also examined in a short course offered by Jumbunna Institute for Indigenous Education & Research at UTS: *Building Indigenous services and collections in libraries masterclass.* The course aims "to support education and professional development training across libraries in relation to Indigenous self-determination" (UTS, Jumbunna Institute, 2019a). Another course, *Indigenous priorities in libraries masterclass,* will be run in Lake Macquarie Libraries (Lake Mac Libraries, 2022).

Links to the ATSILIRN protocols are provided on the websites of the main collecting institutions, e.g. the SLNSW, SLQ, SLV and SLWA, as part of their collection development principles or their strategies for culturally safe places. The IFLA Indigenous Matters Section has linked to the protocols as an example of a resource that could form the basis of a deeper discussion (IFLA Indigenous Matters Section, 2019), they are presented as a resource for museums and other collection-holding institutions on the World Intellectual Property Organization (WIPO) (n.d.), and their relevance is highlighted in other sets of protocols, such as the *Protocols for Native American archival materials* (First Archivist Circle, 2006).

Here in Australia, NSLA plays a leadership role to advocate for and implement strategies for Indigenous cultural competency. The *Indigenous cultural competency principles* (NSLA, 2019a) both support and embrace the ATSILIRN protocols to support the member libraries' activities. Four principles are articulated that embrace crucial values and behaviours (NSLA, 2019a):

- We value identity, culture and diversity in our libraries:
    - Demonstrated knowledge and awareness of the diversity between and within urban, rural and remote Aboriginal and Torres Strait Islander communities and cultures across Australia
    - Demonstrated knowledge and understanding of the issues which affect Aboriginal and Torres Strait Islander peoples historically and in contemporary Australian society
    - Celebration and recognition of culture and diversity in our organisations

- We engage in respectful and inclusive partnerships and work practices
    - Application of cultural communication protocols by library staff when engaging with Aboriginal and Torres Strait Islander peoples
    - Demonstration of cultural sensitivity and respect when assisting Aboriginal and Torres Strait Islander visitors with accessing collections
    - Meaningful involvement of Aboriginal and Torres Strait Islander communities or individuals wherever a programming or collection decision affects them ("nothing about us without us")
    - Knowledge-sharing between library staff to ensure positive, culturally respectful experiences for other staff and visitors

- We demonstrate leadership, integrity, and accountability in the adoption and maintenance of culturally competent work practices
    - Meaningful and monitored integration of ATSILIRN Protocols into library and information management policy and practice
    - Alignment of institutional governance with collection management and collection access to ensure a culturally safe environment
    - Dedicated investment in strengthening organisational capability to respond to the needs of Aboriginal and Torres Strait Islander communities and staff

- We foster culturally responsive library and information services
    - Active recruitment and support of Aboriginal and Torres Strait Islander employees
    - Library spaces for learning, creating, sharing and working acknowledged by Aboriginal and Torres Strait Islander staff and clients as culturally safe; reflected in the number of Aboriginal and Torres Strait Islander visitors
    - Provision of foundation, specialised and localised cultural competency training for all staff.

NSLA has enacted the final point in the list of principles: the provision of competency training for staff. *The Aboriginal and Torres Strait Islander cultural learning project* was launched in 2019 (NSLA, 2019b), with learning activities taking place of the following couple of years. The *Core cultural learning* program was informed by the research undertaken by the NCCC and developed by AIATSIS in partnership with the Department of Prime Minister and Cabinet (DPMC) and the Department of Social Services (DSS). It has been rolled out to all staff in NSLA libraries, with over 1,700 involved at March 2021. The program translates the commitment to respectful interactions and collaborations with Indigenous individuals, families, community groups and organisations into practice (AIATSIS, 2021).

The learning activities start with self-reflection on the cultural influences that have shaped personal identity, then continues by developing an understanding of Aboriginal and Torres Strait Islander cultures, worldviews and laws, founded on the concept of 'Country'. The different modules then examine historical issues, government policy and administration, and the socio-political and cultural roles of community. Issues relating to land rights and native title, self-determination and autonomy, before considering the factors that underpin respectful and meaningful engagement with Indigenous peoples, as well as exploring the valuable contributions that Aboriginal and Torres Strait Islanders have made, and continue to make, to the Australian identity. The final module represents the springboard to an ongoing and maturing learning journey to becoming a culturally proficient library and information professional.

Beyond this holistic approach to developing cultural competency, a number of role-specific, library-specific and community-specific development programs have been introduced, with the ATSILIRN protocols representing the focal point for the review of policies and practices. The commitment to cultural competency will be articulated through ongoing and incremental strategies for workforce development. At the personal level, a network for Aboriginal and Torres Strait Islander staff in the NSLA member libraries, Blakforce (short for Black Workforce) has been established as a national community of practice. The Indigenous Archives and Data Stewardship Hub with the Jumbunna Institute for Indigenous Education & Research at UTS is playing a key role to bridge the gap around Indigenous cultural competence through research and engagement activities and by developing an agenda to support Indigenous people's information and knowledge management needs (UTS, Jumbunna Institute, 2019b). Other examples of Indigenous cultural competence work have been coordinated by SLNSW, with the *Indigenous services Unconference: Public Library Action Plans* (SLNSW, 2017) and *Indigenous Spaces in Library Places* strategy to assist public libraries develop services for the local Indigenous community (SLNSW, 2020b).

The NSLA's *Culturally safe libraries* program (NSLA, 2021b) focuses on ensuring that libraries provide "an onsite and online environment that is emotionally safe for Aboriginal and Torres Strait Islander employees and staff, where people feel supported, can express themselves and their culture, history and identity with dignity and pride" (NSLA, 2021b). While respect, meaning, knowledge and the opportunity for people to learn together without judgement represent the shared values, the ATSILIRN protocols denote the toolbox for professional practice. Rather than remaining theoretical, the program includes a range of activities to help library staff, preferably in small teams, focus on the library's collections and develop a deeper understanding of the application of the protocols to their workplace activities. Staff are encouraged to reflect on policies and practice, and to develop their own action plan for enacting change by embedding the principles of the protocols into their work role.

In its annual report on the progress made towards the goals of the *Indigenous Strategy* for higher education, Universities Australia (2021) states that 92% of Australian universities have incorporated the *Strategy* into their strategic planning activities, with the most common initiatives focusing on Indigenising curricula, Indigenous research strategies, implementation of reconciliation action plans (RAPs) and cultural training. Nineteen of the 39 universities (49%) had an Indigenous-specific graduate attribute. In the three annual reports that have been published (2019, 2020 and 2021) only one mention is made of any initiatives in academic libraries: during NAIDOC Week, Charles Sturt University used the Living Library format to enable "Aboriginal and Torres Strait Islander staff, students and community members to share their lived experiences" (UA, 2019, p.68).

Lilley (2019) argues that "the library and its services and resources are amongst the critical agents that give students the opportunity to achieve academic success in their universities"; it is perhaps surprising that, when Universities Australia's strategic goals include increasing Indigenous student enrolments, retention and success, so little attention is paid to the contributions that can be made by academic libraries. In late 1028, Lilley (2019) undertook an analysis of the websites of all Australian and New Zealand university libraries to identify, "perceived through an Indigenous lens" (Lilley, 2019), the information available on the services, collections and library facilities offered to Indigenous students. Six factors were considered:

- Acknowledgement of Indigenous population and/or use of Indigenous languages on the home page and sub-pages
- Strategic documents (plans, policies, annual reports, service standards, collection statements etc)
- Indigenous collections
- Subject and library guides
- Contacts (subject librarian or specialist who is available to meet and assist Indigenous students
- Indigenous staff.

At that point in time, the research revealed that the New Zealand university libraries performed better than the Australian ones: "Of the Australian libraries, no library fulfilled every factor being evaluated, with the highest score being four, which was recorded by four libraries (10% of the total evaluated)" (Lilley, 2019). It would be interesting to undertake a new review of the library websites to determine the level of improvement: in recent years, a number of Indigenous strategies have been introduced in the academic library sector which articulate the commitment to and support for engagement with Aboriginal and Torres Strait Islander knowledge, culture and communities.

In July 2021, CAUL hosted the *Indigenous Knowledge Symposium* to "bring together practitioners from Australia and New Zealand to share good practice, discuss challenges, and prompt reflection on how academic libraries can work to embed a culture of respect for and recognition of Aboriginal, Torres Strait Islander, Māori and Pasifika knowledge" (CAUL, 2021c). The symposium program included presentations on a wide range of academic library initiatives, given by staff from the University of Sydney, University of Adelaide, James Cook University, Edith Cowan University, University of Newcastle, University of Queensland and Southern Cross University, and staff from the University of Auckland and Auckland University of Technology in New Zealand. The symposium was held as part of CAUL's *Respecting Indigenous Knowledge* program (CAUL, 2021d):

> CAUL will lead a culture of respect, responsibility and reciprocity by developing a cohesive strategic approach to indigenous knowledge. The aim will be to embed a culture of respect and recognition for information and knowledge management practices, and develop strategic partnerships and relationships with Aboriginal and Torres Strait Islander communities. Expected outcomes would be a greater understanding of indigenous knowledge as well as acknowledgement and promotion of the Aboriginal and Torres Strait Islander culture, language, knowledge, artefacts, documents and records in library collections.

The work program for the project will be guided by the Indigenous Knowledge Advisory Group and the second *Indigenous Knowledge Symposium* will be held in 2022. Queensland University Libraries Office of Cooperation (QULOC), which has members in Queensland, northern New South Wales and the Northern Territory, established an Indigenous Strategy Reference Group (ISRG). The activities of QULOC-ISRG "is aligned with University Australia strategies and respective Universities and their library strategies - primarily Indigenous Australian related targets, and providing library resources and research skills to Indigenous education and workplace support programs and initiatives" (QULOC, 2021). Representatives from 11 university libraries serve on the ISRG.

The University of Sydney Library presents a statement of commitment to First Nation clients (University of Sydney Library, 2021a):

The University of Sydney Library is committed to embedding culturally competent practice in what we do, and to develop and deliver services that reflect the Library's diverse clients, and to make their experience more welcoming and inclusive. We work to ensure that all staff, students and community members with whom we interact feel safe, respected and valued. As a custodian of Aboriginal and Torres Strait Islander Knowledges and as a site of knowledge production, we are mindful of Indigenous Cultural Intellectual Property (ICIP) and encourage ethical use of First Nations Knowledge and culturally appropriate research practices.

The University of Sydney Library has released a set of *Aboriginal and Torres Strait Islander Cultural Protocols* (University of Sydney Library, 2021b) which support Library staff to promote culturally safe practices across resources, services and spaces. Accordingly, the protocols provide guidance about and outline practical initiatives in five key areas of library and information practice:

- *Attribution*
  - Acknowledging cultural custodianship
  - Promoting academic referencing and citation guides for First Nations resources
- *Interpretation and representation*
  - Acknowledging the non-Indigenous perspectives of knowledge representation in many materials in the Library collections
  - Developing a 'terminology guide' to overcome linguistic discrimination
  - Developing opportunities for First Nations voices to be heard in the reinterpretation of materials in the Library collections
  - Using Library spaces to host exhibitions that highlight First Nations culture and history, with resources added to the Library's digital archives
  - Balancing the viewpoints presented in materials acquired by the Library, to expand the representation of content by including Indigenous perspectives
- *Access*
  - Collaborating with Aboriginal or Torres Strait Islander communities to negotiate who may access collection materials that include Indigenous Cultural Intellectual Property (ICIP)
  - Supporting the *CARE Principles for Indigenous data governance* (Global Indigenous Data Alliance, 2019) and the FAIR principles of open research
  - Conducting a survey of the Library's collections to identify materials containing First Nations cultural heritage, in collaboration with Aboriginal and Torres Strait Islander staff
  - Identifying potentially sensitive First Nations cultural material
  - Improving access to First Nations cultural materials, including through digitisation
  - Identifying materials which may include secret or sacred cultural information, thereby requiring restricted access
  - Responding to requests for restricted access to materials containing First Nations cultural and intellectual property
  - Ensuring conscious collecting, disposal and preservation of First Nations cultural resources
  - Classification and description, using AIATSIS subject headings, Austlang codes, cultural care notices and other contextual notes
  - Respecting copyright legislation as well as ICIP permissions provided by the relevant First Nations communities
  - Respectfully handling materials containing sensitive cultural information
  - Ensuring that care and sensitivity notices are provided in the Library's public-facing online systems and services

- *Engagement*
  - Inviting First Nations voices to be heard and respected through a range of public programs
  - Sensitively handling contradictory advice from different First Nations community members or organisations
  - Establishing the position of Indigenous Engagement Officer
  - Ensuring cultural safety for Aboriginal and Torres Strait Islander staff
  - Developing a visible First Nations presence within Library spaces in order to increase cultural safety and to promote a greater sense of place and understanding of First Nations cultures
  - Promoting ethical research, following the best practice guidelines presented in the *Code of ethics for Aboriginal and Torres Strait Islander research* (AIATSIS, 2020)
  - Enhancing staff cultural competence through training and development activities
  - Delivering an Acknowledgement of Country before meetings and events
- *Benefit sharing*
  - Respecting and valuing First Nations input through financial compensation for expertise
  - Increasing the number of Aboriginal and Torres Strait Islander staff
- *Reference group*
  - Convening a Reference group which includes a First Nations Library staff member and other University academic, student and professional staff.

A terminology guide is provided to support the use of appropriate First Nations terminology, based on the University's *Guidelines for Aboriginal and Torres Strait Islander communication.* The protocols align with the *United Nations Declaration on the Rights of Indigenous Peoples* (UN, 2007) to ensure the protection of Indigenous "cultural heritage, traditional knowledge, and traditional cultural expressions", as well as the promotion of culturally competent practice and cultural safety in the Library.

Almost 200 University of Sydney Library staff have completed cultural competence training, and several staff members were selected to participate in the *Cultural Competence Leadership Program* run by the NCCC. In addition, the Library has hosted a series of six seminars, the *Aboriginal and Torres Strait Islander Knowledges* seminars, which offered staff and students the opportunity to engage with different aspects of Indigenous language, knowledge and culture. The seminars focused on language and history, cultural astronomy, connection to Country, visual art, medicine and perspectives on gender (University of Sydney Library, 2021a).

Mamtora et al. (2021) discussed the strategies employed by the Library at James Cook University (JCU) to support the university's Reconciliation Action Plan and the Statement of Strategic Intent, with the pledge "to achieve genuine and sustainable reconciliation between the Aboriginal and Torres Strait Islander peoples and the wider community" (JCU, 2019). Library initiatives, underpinned by the ATSILIRN Protocols, are mapped to four broad areas: engagement, information literacy training, procurement and staffing. A significant step in the reconciliation process was made in 2008 with the naming the Townville campus library as the Eddie Koiki Mabo Library. In 2020 the Mabo Interpretative Wall was installed in the foyer: the story of Mabo and the recognition of native title in Australia represents a powerful way to support engagement with the Indigenous community. The position of Indigenous library liaison officer was introduced over 25 years ago, Indigenous staff play important

roles in client service positions, and the importance of Indigenous cultural competence training for all Libray staff is emphasised.

In his discussion on strategies for the Indigenisation of the library and information discipline, Lilley (2021) underscores the imperative for non-Indigenous staff "to develop their skills, knowledge and understanding of cultural values and customs so that they can become effective supporters and potential allies of their Indigenous colleagues" (Lilley, 2021, p.310). Beyond this, however, it is also important for professional associations to provide opportunities for "professional and cultural development that is tailored to the needs" of Indigenous members (Lilley, 2021, p.310).

In 2019, as part of Lyndall Osborne's presidential theme of Indigenous matters, ALIA prepared a sector-wide report on library services for Indigenous communities: *Improving library services for Aboriginal and Torres Strait Islander peoples* (ALIA, 2019d). The case studies and examples of practice presented in the report encompassed initiatives in all States and Territories, covering activities run in the National and State libraries, public libraries and academic libraries which sought to shape the delivery of culturally appropriate and respectful programs and services and guide the approach to collection management in libraries. It is noted in the report that NSLA had launched the *Aboriginal and Torres Strait Islander cultural learning project* (NSLA, 2019b) and cultural competencies were included in ALIA's education policy (ALIA, 2020e) and in the CPD Scheme with two specialisations, Indigenous Engagement (ALIA, 2021e) and Aboriginal and Torres Strait Islander Services (ALIA, 2021f). The ALIA Public Library Proficiency program also includes a section on Indigenous matters.

Lilley (2021) argues that the library and information profession needs to promote the career opportunities for Aboriginal and Torres Strait Islanders: "there is a need for the high visibility of Indigenous content, individuals and languages incorporate publications, websites and social media postings, so that Indigenous communities can see themselves reflected and valued" (Lilley, 2021, p.310). Additionally, the wording of job advertisements to demonstrate cultural inclusivity in recruitment is an important factor in ensuring the library and information sector attracts a diverse workforce (Muir et al., 2020). There is clearly scope for library and information services to re-imagine the career pathways available within the profession to ensure that there are attractive opportunities for the development and advancement of Indigenous staff "because those with education, skills and experience will also be attractive to recruiters seeking to lure them to other professions and career pathways" (Lilley, 2021, p.311). The adoption of an intercultural approach to leadership to develop and support culturally safe libraries has also been proposed (Masterton, 2020).

The issues associated with cultural safety for Indigenous staff working in libraries and archives are central to the research undertaken by Thorpe (2021). The themes emerging from Thorpe's research focus on issues relating to racism, stereotypes and microaggressions in Australian libraries and archives; issues relating to agency and representation, and "the burden of Indigenous staff having to represent 'all things Indigenous'" (Thorpe, 2021a, p.346); and the "vital need for truth-telling around Australia's colonial histories in Australian libraries and archives" (Thorpe, 2021a, p.346). Thorpe points to the complexities and tensions that sit at the intersection of Indigenous and western knowledge management processes in libraries (Roy, 2015) and the gulf in library and archival education in all aspects of Indigenous knowledge practices: "One of the main challenges is

that, broadly speaking, library and archive workers arrive in an institutional setting with no skills or competencies to support Indigenous agendas" (Thorpe, 2021a, p.348). Lilley (2021) reminds us that, in New Zealand, LIANZA has added BOK 11, *Understanding Māori knowledge paradigms*, to the framework of professional skills (LIANZA, 2021a), but he stresses that learning should not be viewed as a stand-alone, add-on activity, but it needs to be deeply and fully integrated into all areas of our professional understanding.

To ensure the cultural relevance of libraries for Indigenous communities, Camille Callison (2021), chair of the IFLA Indigenous Matters Section, has stressed the importance of multi-pronged approaches to training and professional development, not only to encourage Indigenous people to enter the library profession, but also to enable "library and information professionals of all backgrounds to work together to create more inclusive systems" (McGuire, 2021). As the world embarks on the *UNESCO Decade of Indigenous Languages (2022-2032)* (UNESCO, 2021b), there will be plentiful opportunities for the library and information profession to leverage the opportunities for Indigenising Australian libraries and developing inclusive services.

The field that supports Indigenous people's library, information and archiving needs is still an emerging one. While the importance of improving non-Indigenous people's cultural competency is discussed in the academic and professional literature, as well as being the focus of current project work in many libraries and archives, there is also growing interest in how the library and information fields, and indeed the wider GLAM sector, can support Indigenous people's information needs on Country. An understanding of the unique requirements for managing Indigenous knowledges and information through Indigenous knowledge frameworks, systems and structures is required. The foundational work of ATSILIRN is acknowledged, but there are some major gaps in articulating the types of skills and competencies that are required to support this work.

The Indigenous Data Sovereignty movement, both internationally (Te Mana Raraunga Māori Data Sovereignty Network, n.d.; US Indigenous Sovereignty Network, n.d.) and in Australia (Maiam nayri Wingara Indigenous Data Sovereignty Collective (n.d), provides an example of a refocus of community-based governance of data and information more broadly. These activities depend on the intersection with a range of library and GLAM institutions across public and academic settings. (K. Thorpe, personal communication, January 14, 2022).

Aligned with the Indigenous Data Sovereignty movement is a need for Indigenous-led decision making and governance and a commitment to restoring Indigenous people's rights to information in the context of the *UN Declaration on the Rights of Indigenous Peoples* (UN, 2007). Examples of emerging work on restoring rights have been articulated in the position statement published recently by the Indigenous Archives Collective (2021). The position statement "supports the work of the Indigenous Archives Collective to assert the rights of Indigenous people's to challenge and respond to their information and knowledges contained in archival records held in Galleries, Libraries, Archives and Museum (GLAM) institutions through a *Right of Reply*" (Thorpe, 2021b).

4.10   Summary

The content in this chapter of the report, along with the two preceding chapters, has been extensive and detailed. The discussion has been structured around three domains: core professional competencies, specialised professional competencies, and skills for future professional practice. In Chapter 2, the

discussion on core professional competencies focused on the library and information skills frameworks developed and published by four national professional associations: ALIA, LIANZA, CILIP and ALA. These frameworks endeavour to cover the broad spectrum of library and information practice and are used to guide the accreditation of library and information courses in the respective countries.

In Chapter 3 the specialised professional competency frameworks which map the areas of knowledge and skills required by people working across the broad spectrum of library and information services were introduced, to include public libraries, academic libraries, special libraries, health library and information services, law libraries, government libraries and school libraries. The frameworks relevant to the allied professions, i.e. GLAM, archives, records and information management, were also reviewed. Where appropriate, socio-political differences were noted with attention paid to frameworks relevant to professional practice in Australia, New Zealand, the UK, Canada and the US.

Some of the skills for future professional practice were explored in Chapter 4. The focus turned to eight areas which were impacted by the rapidly evolving digital information environment: digital dexterity, digital curation, data librarianship, open scholarship, digital humanities librarianship, information governance, artificial intelligence and machine learning, and media literacy. Importantly, attention was also paid to the sector's emerging awareness of and engagement with Indigenous languages, knowledge and culture, with a review of the strategies to develop cultural competence in Australian library and information services.

The scope of the environmental scan and literature review on professional knowledge and skills has been broad and deep, with an immense amount of information to read and interpret. These three chapters of the report have demonstrated that the skillsets required for a job can be influenced by the national context, by the geographical location (metropolitan, regional, rural) or by the community served (public, academic, health, government or corporate). Most of the skills frameworks and competency analyses highlighted the combination of technical skills and generic or employability skills, but increasingly, the 'hard' skills that are sought for work in libraries are being counterbalanced by the 'soft' skills. In her analysis of job advertisements for positions in academic libraries, Tokarz (2019) found that there was a clear trend for applicants to demonstrate the soft skills or personal traits required for the job, for example creativity, innovation, collaboration and communication. This view was supported by Fraser-Arnott (2017) who found, in her examination of the competencies required for information specialists in emerging roles, that personal qualities were critical for all areas of professional practice: adaptability and flexibility, teamwork and collaboration, initiative, time management and working under pressure, analytical thinking and decision making, commitment to professional development.

It was also found that new areas of professional practice are inevitably accompanied by fresh ethical questions. There was evidence that the digitisation of cultural heritage resources would require information professionals to consider the ethical issues associated with selection bias, limitations of access, privacy and the protection of personal information (Mažuch, 2017; van der Velde & Blinco, 2015). Significantly, each of the areas of knowledge and skills for future professional practice considered the essential, profession-defining core values and ethical principles. This leads to the question as to whether the library and information profession might be shaped more by values and ethics than by technical skills. Our professional values and ethics are the topics discussed in the next chapter of the report.

5.   Professional values and ethics

One of the principal objectives for the ALIA *Professional Pathways* project is to develop strategies to "attract clever people from a wide range of backgrounds to the industry, who share the ethos and values of the profession, in order to be inclusive and relevant" (ALIA, 2020d, p.23). It is therefore vital that there is a sector-wide understanding of the values, ethics and policies which distinguish the LIS profession from other fields, and thus promote these as a core element of professional identity. The notion of professional identity has been defined as one's professional self-concept based on attributes, beliefs, values, motives, and experiences (Ibarra, 1999; Schein, 1978). In the LIS context, the term can therefore refer to "the way an individual feels about being a member of the librarianship profession" (Henczel, 2016, p.4). Fraser-Arnott (2016) explained: "Professional identity is the identity that an individual builds around their work or their professional life. In essence it is the response to the question 'Who am I as a professional?'" (p.ii).

The concept of professional identity can extend beyond the individual experience, however, as noted by Billot (2010) when he described it as "the values, beliefs and practices held in common with others of that affiliation" (p.712). A more expansive definition is offered by Gibson, Dollarhide and Moss (2010) when they postulate that three factors come into play: "self-labeling as a professional, integration of skills and attitudes as a professional, and a perception of context in a professional community" (p.21). The professional community is an important dimension in the ALIA *Professional Pathways* project: the knowledge and skills required by staff who work in library and information services are broadening and deepening, "with many of the traditional roles becoming more complex and new and emerging roles adding to the overall complexity of the profession" (Henczel, 2016, p.8). As the ambit of library services and programs expands, a diverse range of personnel are attracted to work in the LIS sector, with qualifications in other disciplines such as social work, community development, the creative arts, education, early childhood literacy, IT or data science. ALIA's research (ALIA, 2020c) confirmed that many different professional skillsets contributed to the design, delivery and administration of the programs and services available to users (Figure 6).

Figure 6: The landscape of skillsets underpinning library and information services (ALIA, 2020c)

There was evidence of a growing interest in achieving professional status within the LIS sector, even though staff may not have an LIS-qualification. Employers stressed that, as they were already employing "highly educated people from different disciplines, who bring important knowledge and skills to the sector" (ALIA, 2020d), they would like to see them embraced by the profession in which they worked. Individual staff with non-LIS qualifications who believed they had found a rewarding career in libraries explained their conundrum: "I don't see myself as a librarian, but I do want to be recognised as a library professional". Despite their different educational backgrounds, people felt that they had been able to successfully socialise into and be accepted by the library and information community. Accordingly, they were able to learn "the rules, skills, values, norms, customs and symbols that make up that community's culture" (Fraser-Arnott, 2016, p.180). Professional associations can be viewed as critical elements in the overall context and structure of a profession, whereby membership of a professional community facilitates the development of identity, both personal and professional (Mackay, 2014), and fosters the associated values, attitudes and behaviours. The social connection with others provided by the professional community therefore reenforces the perception of professional identity, helping individuals understand the notion that "we are most sure of who we are when we know where we belong" (Mackay, 2014, p.73, cited by Henczel, 2016, pp.191-2).

The topic of 'professions' has been extensively researched over the years and much has been written about the defining characteristics of a profession, as opposed to, for example, a trade or a craft. Beaton (2010) draws upon the views of Cheetham and Chivers (2005) who list eleven key attributes of a profession, including the organisation of its representatives into "some sort of professional body", and the development of "an ethical code of some kind" (Beaton, 2010. P.4).

In this chapter of the report, the themes of professional values and professional ethics in the library and information profession will be explored. In essence, the notions of professional values and professional ethics are intertwined, but it has been acknowledged that values were "broader" than ethical standards (Henczel, 2016). Values have been defined as "beliefs and ideas that are major, significant, lasting and shared by the members of a group" (Gorman, 2015, p.1), while ethics encompass the set of rules, established by a group or culture, that governs a person's behaviour. A code of ethics "tends to reflect… shared values" (Koehler, 2006, p.87) and represents "the application of those values" (Koehler, 2003, p.100). Values and ethics are viewed as being germane to all areas of human life, particularly when crucial choices have to be made. It has been contended that "values determine what is important", whereas "ethics determine what is right" (Surbhi, 2017). Thus "it is our choices… that show what we truly are, rather than our abilities" (J.K. Rowling, cited in LSE, 2014).

5.1 Professional values in library and information science

Over the years, many studies of the values of library and information professionals have been undertaken (Ballard, 2016; Berg & Jacobs, 2016; Desligneres, 2017; Dole & Hurych, 2001; Dole et al., 2000; Foster & McMenemy, 2012; Koehler, 2003, 2015; Finks, 1989; Moreillon, 2021; Scott & Saunders, 2021; West, 2020). In her study of the impact of national library associations, Henczel (2016) found that participation in the professional community resulted in professional values which were not taught, but developed "through interaction with others, learning from them and collaborating with them" (p.124). Research participants reported that their involvement in their association increased professionalism in the workplace and nurtured a sense of professional growth.

As a starting point for the discussion on professional values in the library sector, the views on the topic presented by Gorman (2015) are reviewed. Gorman's text, *Our enduring values revisited: Librarianship in an ever-changing world*, reconsiders the values of librarianship which he had examined in an earlier book, *Our enduring values: Librarianship in the 21st century* (Gorman, 2000). Although Gorman initially identified eight core values, over the ensuing 15 years he came to believe that these values were underpinned by one key principle: the greater good. He argued that the belief in the greater good represented the common thread that weaves through the other eight values: "our work in libraries must be directed to benefit not only the communities we serve, but also every single member of that community and the wider society" (Gorman, 2015, p.212). The principle of the greater good should therefore guide all aspects of library practice.

Interestingly, the notion of belief in the greater good of society was inherent in the founding mandate of the Boston Public Library, the first free public library in the US, which emphasised the importance of access to information, "so that the largest possible number of persons should be induced to read and understand questions going down to the very foundations of social order" (Berry, 2018, p.10). Likewise in England, the Public Libraries Act 1850 introduced book lending services for free, which contributed greatly to raising the levels of literacy across the community, benefitting individuals and society. On the same day in July 1854, the Governor of Victoria, Sir Charles Hotham, lay the foundation stones at the University of Melbourne and at the Public Library of Victoria. In his presentation at the new public library, Sir Charles said: "I do not know which is the more important event of today: whether the laying of the foundation stone of the first Library or the ceremony at the University should be the first consideration, but I consider the Library is the most important for the people" (cited by Horton, 1996, p.259).

Over one and a half centuries have since passed, but the imperative for recognising the role of libraries as an embodiment of the public good continues today. This is particularly relevant when addressing the challenges of applying market logic based on profitability where "everything must earn its keep; contribute to the bottom line" (LSE, 2014), of replacing libraries with commercial bookstores like Amazon (Berry, 2018), or of privatising libraries (Public Libraries News, n.d.). Gorman believes that "the greater good is a communitarian principle that is the antithesis of the individualism, materialism, and selfishness that dominate early twenty-first-century Western societies" (Gorman, 2015, p.212).

The nine core values promulgated by Gorman (2015, pp.35-37) encompass:

1. Stewardship:
   - Preserving the human record to ensure that future generations know what we know
   - Caring for and nurturing education for librarianship so we pass on our best values and practices
   - Being professional, good stewards of our libraries so that we earn the respect of our communities
2. Service
   - Ensuring that all our policies and procedures are animated by the ethic of service to individuals, communities, society, and posterity
   - Evaluating all our policies and procedures, using service as a criterion

3. Intellectual freedom
   - Maintaining a commitment to the idea that all people in a free society should be able to read and view whatever they wish to read and view
   - Defending the intellectual freedom of all members of our communities
   - Defending the free expression of the minority opinion
   - Making the library's facilities and programs accessible to all
4. Rationalism
   - Organizing and managing library services in a rational manner, applying rationalism and the scientific method to all library procedures and programs
5. Literacy and learning
   - Encouraging literacy and the love of learning
   - Encouraging lifelong sustained reading
   - Making the library a focus of literacy teaching
6. Equity of access to recorded knowledge and information
   - Ensuring that all library resources and programs are accessible to all
   - Overcoming technological and monetary barriers to access
7. Privacy
   - Ensuring the confidentiality of records of library use
   - Overcoming technological invasions of library use
8. Democracy
   - Playing our part in maintaining the values of a democratic society
   - Participating in the educational process to ensure the educated citizenry that is vital to democracy
   - Employing democracy in library management
9. The greater good
   - Seeking though all our policies and practices to work for the good of all library users and the communities and societies in which they live.

As the leading international body for the library and information sector established almost a century ago, IFLA has long focused on the core values for the profession. IFLA embraces four core values (IFLA, 2019c, p.2):

- The endorsement of the principles of freedom of access to information, ideas and works of imagination and freedom of expression embodied in Article 19 of the Universal Declaration of Human Rights
- The belief that people, communities and organisations need universal and equitable access to information, ideas and works of imagination for their social, educational, cultural, democratic and economic well-being
- The conviction that delivery of high-quality library and information services helps guarantee that access
- The commitment to enable all Members of the Federation to engage in, and benefit from, its activities without regard to citizenship, disability, ethnic origin, gender, geographical location, language, political philosophy, race or religion.

Although the wording differs, the essence of IFLA's core values aligns with the ideas put forward by Gorman (2015), apart from the theme of privacy and the confidentiality of library users' records (this is considered by IFLA in its code of ethics (IFLA, 2012)). As part of the *Global Vision* initiative, IFLA conducted extensive research into library and information professionals' understandings of the core values of libraries, as reported by those working in the field (IFLA, 2019c). One of the noteworthy findings from the survey of librarians across the world was that they were united in their

understanding of goals and values of the profession, so that "across all regions, library types, and lengths of library experience, we share a deep commitment to the enduring value and role of libraries" (IFLA, 2019c, p.2).

People who attended the face-to-face *IFLA Global Vision* workshops or who completed the online survey were asked to rank a listing of ten core values in order of perceived importance. The findings drawn from the analysed data are presented for the entire study (referred to as the 'global results'), as well as for the four groupings of respondents: library types (National libraries, academic and research libraries, public libraries, school libraries, special libraries, and other types of libraries), library experience (1-10 years, 11-20 years, 21-30 years and 31+ years), regions (Africa, Asia and Oceania, Europe, Latin America and the Caribbean, Middle East and North Africa, and North America) and IFLA professional units. The global results revealed the following order of importance for the core values of libraries drawn:

1. Free and equal access to information
2. Commitment to dissemination of information and knowledge
3. Protection of cultural heritage and memory
4. Commitment to community engagement and empowerment
5. Dedication to learning
6. Diversity and inclusion
7. Professionalism and ethical conduct
8. Embracing the shift to digital
9. Freedom of expression
10. Spirit of collaboration.

There was consensus across all groupings of respondents that the value of free and equal access to information was the most important one, with very few differing views recorded. The granularity of the findings is discussed in the *IFLA Global Vision report* (IFLA, 2019c): it was specifically noted that national libraries placed greater significance on the protection of cultural heritage and memory, and also ranked the values of professionalism and ethical conduct, and embracing the shift to digital more highly than other groups of respondents. Respondents working in public libraries and in school libraries added greater weight to diversity and inclusion than other types of libraries.

The professional unit group of IFLA Strategic Programmes (i.e the groups associated with the topics of copyright and other legal matters (IFLA CLM), freedom of access to information and freedom of expression (IFLA FAIFE), Library Development (LDP) and Preservation and Conservation (PAC)) singled out professionalism and ethical conduct as the most significant value, and it was also found that librarians with longer experience in the sector (21+ years) felt professionalism and ethical conduct was more important than their colleagues with less experience (1-20 years). Diversity and inclusion were valued as highly by respondents associated with Division IV (Support for the Profession), as well as by the respondents from North America, Latin America and the Caribbean, and Europe, compared to those from other regions of the world.

The global support for free and equal access to information as the most important core value of libraries naturally reflects IFLA's core value which articulates the belief that people, communities and organisations need universal and equitable access to information, ideas and works of imagination for their social, educational, cultural, democratic and economic well-being (IFLA, 2019c, p.2). IFLA has also strongly advocated that access to information represents a crucial dimension of the contribution

libraries can make to the achievement of the United Nations (UN) Sustainable Development Goals (SDGs) (UN, n.d.-a). Access to information is included as a specific target under Goal 16, which focuses on peace, justice and strong institutions. Target 16.10 seeks to ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements (UN, n.d.-b). The imperative for access to information is succinctly summarised in the resource *Libraries can drive progress across the entire UN 2030 agenda* (IFLA, n.d.-a) to outline the benefits of access to information are directly associated with 15 of the 17 SDGs which collectively represent people's social, educational, cultural, democratic and economic well-being.

Further insights into the contributions libraries can make towards the achievement of the SDGs were presented in the document *Access and opportunity for all: How libraries contribute to the United Nations 2030 Agenda* (IFLA, 2016). The document opens with a clear statement: "In the context of the UN 2030 Agenda, the International Federation of Library Associations and Institutions (IFLA) believes that increasing access to information and knowledge across society, assisted by the availability of information and communications technologies (ICTs), supports sustainable development and improves people's lives" (IFLA, 2016, p.2). Each of the SDGs is examined through the lens of the roles libraries can play, illustrated by examples of the programs libraries have coordinated in different countries across the world. Policy makers are therefore encouraged to include libraries in their national development plan, to partner productively with libraries, and to collaborate with libraries to increase society's awareness about the SDGs, and what they might mean at the local community level.

Here in Australia, ALIA has played a leading role in discussions with the Australian Government about the contribution that libraries can make towards the achievement of the SDGs. ALIA's commitment to the UN 2030 Agenda was affirmed when a new Constitution Object of the Association was accepted and introduced in 2017: "To endorse the principles of the United Nations Universal Declaration of Human Rights, Article 19, and the 2030 Sustainable Development Goals in response to the many challenges faced by the world today and into the future" (ALIA, 2021g). It is noteworthy that the first Constitution Object addresses the core values of access to information and the wider public good: "To promote the free flow of information and ideas in the interest of all Australians and a thriving culture, economy, environment and democracy" (ALIA, 2021g).

ALIA identified three values-driven roles for Australian libraries where they could actively support work on the SDGs (ALIA, 2018b):

- Supporting freedom of access to information outcomes
- Providing examples of success, which can be used as part of Australia's report on progress towards the achievement of the SDGs
- Helping to communicate the UN 2030 Agenda to the general population.

ALIA's first Constitution Object prefaces the association's policy statement on core values. The policy statement presents ten core values (ALIA, 2018a):

1. Promotion of the free flow of information and ideas through open access to recorded knowledge, information, and creative works
2. Delivery of authentic information and evidence-based practice supported by quality research
3. Connection of people to ideas, knowledge creation and learning
4. Dedication to fostering reading, information and digital literacies

5. Respect for the diversity, individuality and equality of all and recognition of the rights of Aboriginal and Torres Strait Islander peoples
6. Adherence to information privacy principles
7. Management, organisation and preservation of the human record
8. Excellence, accountability, integrity and responsibility in services to our communities
9. Commitment to maintaining currency of professional knowledge and practice
10. Partnerships and collaborations to advance these values.

The *ALIA member code of conduct statement* reinforces the ten professional values, as well as ALIA's Constitutional Objects, to ensure that all members demonstrate "the highest standards of ethical practice and professional competence" (ALIA, 2020g). A quarter of a century ago, Warren Horton, as the then Director-General of the National Library of Australia, was proud to declare that "the library profession in Australia rests upon a bedrock of very solid and long-term values" (1996, p.267).

Like ALIA, the majority of library associations have identified the core values of the profession. The principles and values published by a number of associations are presented in Table 37, including:

- *ALIA core values policy statement* (ALIA, 2018a)
- *Ethical framework* (CILIP, 2018a)
- *Core values of librarianship* (ALA, 2019a).

In New Zealand, LIANZA focuses on a code of professional conduct (2003) to express the values-driven behaviour expected of library and information professionals. The values extracted from documents published by CILIP (2021a) and LIANZA (2003) are presented in the table, as well as Gorman's 'enduring values' (2015). As already noted, professional values and professional ethics are often intertwined and as a result, some documents presented a blended view of the themes, with reference also made to members' professional conduct. CILIP, for example, includes ethics and values as a core principle of professional practice: they are placed at the very heart of the PKSB (CILIP, 2021a). The *Ethical framework* (CILIP, 2018a) is structured around the individual's commitment to professional ethics and professional conduct, and the association's commitment to shared beliefs and values, i.e. through upholding, promoting and defending the listed principles.

Although the Canadian Library Association (CLA) was dissolved in 2015, the website is still available (CLA, 2021). The CLA outlined seven values, some of which appear to relate to the association, as opposed to the wider profession. Intellectual freedom, diversity and universal access to library service as three higher order values, and transparency and open communication, accountability, collaboration and member voices and contributions as organisation-specific values (CLA, 2021). A *Statement on intellectual freedom and libraries* was released in 2015; this document has been adopted and subsequently reviewed by the Canadian Federation of Library Associations – Fédération Canadienne des Associations de Bibliothèques (CFLA-FCAB) which was established in 2016. Intellectual freedom used as an overarching framework for the profession across Canada "to provide, defend, and promote equitable access to the widest variety of expressive content and resist calls for censorship and the adoption of systems that deny or restrict access to resources" (CFLA-FCAB, 2019). Reference is made to the principles presented in key documents such as the *Canadian Charter on Rights and Freedoms* and the *Universal Declaration of Human Rights.* The relevant individual values have been included in the table.

The task of developing a national core values statement is not without its challenges. The work of the ALA involved "identifying and succinctly articulating what values were at the core of an incredibly diverse profession made up of an array of types of professional librarians who serve even more diverse populations of users" (Berg & Jacobs, 2016, p.459). There are inevitably some differences between the specific values that are included in the associations' statements, and the wording may vary, but a conceptual summary is presented in Table 37.

Table 37: Professional values as identified by different national associations

Value	ALIA	LIANZA	CILIP	ALA	CLA	Gorman
The public good			✓	✓		✓
Access to information, knowledge & ideas	✓	✓	✓	✓	✓	✓
Authentic information, EBP, quality research	✓	✓				
Connection of people to ideas & knowledge	✓				✓	
Literacies & learning	✓				✓	✓
Diversity, equality & inclusion	✓	✓	✓	✓	✓	✓
Privacy & confidentiality	✓	✓	✓	✓	✓	✓
Preservation of the human record	✓	✓		✓		✓
High quality service	✓		✓	✓		✓
Maintaining currency of professional knowledge	✓	✓	✓			
Partnerships & collaborations	✓				✓	
Rationalism (management)						✓
Democracy				✓		✓
Human rights			✓		✓	
Integrity of information items, IP			✓			
Intellectual freedom, without censorship		✓	✓	✓	✓	✓
Sustainability				✓		

The ALA statement of the core values of librarianship was adopted in 2004, with the latest revisions made in 2019, when sustainability was added as a new value. This increased the listing from 11 to 12 core values. The move to include sustainability was in response to the push by ALA members to emphasise the role of libraries in promoting community awareness about climate change and a sustainable future for the world, and to take steps to reduce the environmental footprint of the libraries themselves (ALA, 2019a; ALA, 2019b). The landscape of the ALA values framework is complex, as the values are said to reflect the history and ongoing development of the profession and they "have been advanced, expanded, and refined by numerous policy statements" (ALA, 2019a).

The additional documents include the *Library Bill of Rights*, originally adopted in 1936, with the last revision in 2019 (ALA, 2019c), ALA's mission statement, *Libraries: An American value* (ALA, 1999) and the *Freedom to read statement*, originally adopted in 1953, with the most recent amendment published in 2004 (ALA, 2004). The values of diversity and equality, intellectual freedom, freedom of access to information and ideas, privacy and confidentiality, literacies and learning, and democracy are interwoven through these documents. In its *Free access to information statement,* ALIA also underscores the concept of freedom in a democratic society which is dependent on individuals' unrestricted access to information and ideas (ALIA, 2018c). The statement emphasises equity, diversity and inclusion, privacy and confidentiality and resistance to censorship.

One research study examined the eight enduring values of librarianship discussed by Gorman in his earlier text (2000) to determine the extent to which they were included in the formal documentation disseminated by 36 national library associations (Foster & McMenemy, 2012). It should be noted that while the focus was on 'values', the source documents were referred to as 'codes of ethics'. While values and ethics are acknowledged to be overlapping and intertwined concepts (Gorman, 2015), the authors did not attempt to distinguish between the two in their study. One of the key research objectives was to investigate whether political and cultural contexts might influence the values included in the codes. For example, the value of democracy specified by Gorman embraces the belief that it requires "a steady flow of information to citizens and for citizens to be knowledgeable about social and political issues" (Gorman, 2015, p.196). Foster and McMenemy found that democracy was a topic of interest to the profession only in those countries which had "experienced non-democratic regimes, war, occupation, colonial rule or have gained independence in the last century" (Foster & McMenemy, 2012, p.17). The cultural context of a country may also be a factor that directly influences professional values.

Several studies have been conducted in the US to investigate the degree of alignment between librarians' personal beliefs and the ALA's statement of professional values. In his study of iprofessional perspectives of intellectual freedom, Oltman (2019) reported that almost 40% of survey respondents declared that they experienced a dissonance between their own beliefs and the ALA's stance on intellectual freedom, while Harkovitch, Hirst and Loomis (2003) in an American study and Moody (2004) in an Australian study found around 25% of their research participants had been conflicted at some point in their career. Scott and Saunders (2021) focused on 'neutrality', i.e. being objective in the provision of information, lacking bias, not taking sides on an issue or not expressing opinions. Over two thirds of respondents supported the definition that 'neutrality' meant 'being objective in the provision of information'. However, it was found that conflict between professional and personal values could easily occur in situations where for example, white supremacist groups wished to book a meeting room in the library, or where information was sought by conspiracy theorists who rejected the body of scientific evidence about an issue, which directly challenged the professional desire to ensure the authority and accuracy in information provision.

Values, however, should not be regarded as absolutes: each generation should subject their values to "constant scrutiny, re-examination, and reformulation" (Preer, 2008, p.xiv), and thus change, adapt or reinterpret them as society changes and evolves. Lankes (2018) argued that the strength of the library and information profession lies in its ability "to implement long held principles in changing realities of those that the library serves". Our maturing awareness of the need for ethical stewardship of culturally sensitive materials is one example of how the profession adjusts to developments in society.

Foster and McMenemy (2012) report that while the majority of codes focus on the notion of stewardship as safely preserving the records of humankind for the benefit of future generations, different issues are associated with culturally sensitive materials. The strong professional emphasis on the value of freedom of access to information, knowledge and ideas conflicts with the requirement for the respectful care and use of culturally sensitive heritage materials. For many communities, "the public release of or access to specialized information or knowledge – gathered with and without informed consent – can cause irreparable harm" (First Archivists Circle, 2006). In the context of social work, it has been argued that professionals always need to be ready to review their current values and adjust their practice to successfully build culturally sensitive relationships with diverse communities (Reddy, 2019).

In the US, *Diversity standards* published by the Association of College and Research Libraries (ACRL) clearly emphasise the imperative for developing professional values dedicated to culturally competent service. The foundation for appreciating the importance of multicultural identities lies in the development of "an understanding of their own personal and cultural values and beliefs" (ACRL, 2012, St.1). It is stated that "Organizational and professional values are the norms and guidelines that shape expectations for acceptable behavior and provide standards for both individual and group action. Establishing organizational and professional values that reflect cultural competence is an essential step in putting those values into practice" (ACRL, 2012, St.3). The professional values of social justice and respect for diversity are therefore critical (Mathuews, 2016).

Finks (1989) stated that values are deeper and more meaningful than good intentions or motherhood statements: values should "correlate with reality" (p.356), they need to be applied in and integrated into our personal and professional lives. For values to flourish, "we need to call them to consciousness and criticize and question them, to apply them to our problems and quandries, to invoke them as we plan and make decisions, and ultimately to cherish and celebrate them" (Finks, 1989, p.356). For a person stand up, to acknowledge their professional identity and say, 'I am a librarian' is a "profoundly important" act, stated Poole (2019), because it is "a declaration that you believe that people have a right to take control of the information in their lives, to use it to better themselves, change their future". It is essentially the core values of the profession that represent "the culture that permeates everything we do, they are the reason why a library is something unique and different from almost any other environment". The imperative for "putting values into practice" and demonstrating "acceptable professional behavior" (Koehler, 2006, p.83) will be discussed further in the following section on professional ethics.

5.2   Professional ethical practice in library and information science

Ethical practice sits at the heart of a profession: codes of ethics "require behaviour and practice beyond the personal moral obligations of an individual… they define and demand standards of behaviour in respect to the services provided to the public and in dealing with professional colleagues" (ACoP, n.d.). This definition is expanded by Manžuch (2017): "Traditionally, one of the main goals of professional ethics is to pursue explicitly defined values and norms and discourage inappropriate behavior by professionals in order to develop public trust in services delivered by certain institutions" (p.1). Librarians are trusted because they have always been consistently trustworthy, because "they are built on the ethos, ethics and values of librarianship" (Poole, 2019).

This view has been validated in a survey undertaken by Ipsos MORI (2021). The *Ipsos MORI Veracity Index* has tracked the British public's trust in different professions since 1983, although interestingly, librarians were included in the *Veracity Index* for the first time this year. The findings revealed that 93% of Britons trusted librarians to tell the truth, just one percentage point behind the nursing profession (94%), which has been recognised as the highest scoring profession since its inclusion in the index in 2016 (Ipsos MORI, 2021).

Although research has revealed that librarians and other information professionals may share a very similar set of values across professional and political boundaries, there is nevertheless "a wide variation in their application, use and enforcement" (Koehler, 2006, p.91). The field of information ethics is arguably multifaceted and complex, given the large and diverse collection of professional disciplines that includes librarians, archivists, records managers, information managers, information brokers, researchers and educators. Accordingly, Hauptman (2008) observed that "the ethical guidelines and codes that attempt to control their activity may vary dramatically and at times conflicts can arise" (p.244). Typically, library and information professionals will interpret ethical principles within the context of their own institutions and professional situations (Preer, 2008).

In the business sector, a company's fiduciary responsibilities to shareholders and the motivation to generate a profit have inevitably led to professional behaviours that may differ significantly from those in the public or academic sectors. It is commonly acknowledged that the library and information profession has embodied a sense of responsibility to society at large, as opposed to seeking financial gain (Fraser-Arnott, 2016), yet there is an inherent conflict for ICT professionals whose code of ethics clearly states that members should adhere to the "primacy of the public interest". This requires them to "place the interests of the public above those of personal, business or sectional interests" (Australian Computer Society (ACS), n.d.). Merkel and Burmeister (2015) point out that "IT professionals do not get paid by the public interest – their work is mostly paid for by business and sectional interests" and a business is expected to act in the interest of its shareholders.

Horton (1996) questioned "the implications of thinking of ourselves in the public sector for example as much more of a business" (p.272) with 'clients' and 'customers', as opposed to 'users' or 'patrons'. More recently, Trepanier, Shiri and Samek (2019) also questioned what the different terms of 'clients' and 'users' might imply about "fundamental differences in duty, confidentiality and commodification of underlying data/information" (p.292). Accordingly, Horton called for a rigorous, intellectual debate about determining exactly what 'business' libraries were in, and how the findings might influence managerial decisions or impact on the values inherent in beliefs such as 'free access to information'.

It has been argued that austerity measures in the UK have led to funding decisions being based on "the logic of market values and profitability, rather than a concern for inequalities, community and inclusive access to information and literature" (Bailey, 2014) with policy makers failing to accept the contribution libraries make to the public good. Poole has accused governments of appointing "bureaucrats who understand the price of everything and the value of nothing – especially not libraries" (Poole, 2019). The tensions between 'public' and 'private' are explored in the comparative review of IFLA's code of ethics (IFLA, 2012a) and the *Data science code of professional conduct* published by the Data Science Association (DSA, 2013). While librarians advocate for universal access to information, data scientists are generally in a contractual relationship with their clients and therefore deal with data which "may be owned and capitalized upon for profit-maximization" (Trepanier et al., 2019, p.293).

Ethical issues have been examined and discussed extensively in the professional literature across the world (Anderson, 2006; Besnoy, 2009; Buchanan & Henderson, 2008; Cihak & Howland, 2012; Fallis, 2007; Ferguson, Thornley & Gibb, 2015; Graff et al., 2020; Leuzinger & Barnane, 2004; Lipinski, 2001; Luo, 2016; McMenemy et al., 2007; Morrissey, 2008; NAA, 2012; Preer, 2008; Simpson, 2009; Valletton Presig et al., 2014; van der Velde & Blinco, 2015; Wilson et al., 2019). There are plentiful ethical dilemmas which are explored in the literature, relating to professional activities in major collections agencies, public libraries, academic libraries, corporate libraries or health libraries. The range of ethical issues encompasses copyright, freedom of information, internet filtering, access to and preservation of electronic information resources, public library fees and charges, public internet access, information security, data protection, privacy and confidentiality, electronic waste. Ethical dilemmas and ethical discord can occur "wherever information is generated, organized, stored, distributed and consumed" (Valletton Presig et al., 2014, p.12) and digital technologies have escalated the potential for ethical quandaries. Inevitably, as professional practice evolves in a changing world, fresh ethical problems will continue to arise.

The Australian Computer Society (ACS) partnered with the Centre of Applied Philosophy and Public Ethics (CAPPE) and the Australian Research Council (ARC) to undertake research into ICT ethics with the goal of creating "a practical and professional ethical and regulatory model that could become a quality standard across the industry here and overseas" (ACS, 2005). The ACS subsequently developed a suite of educational resources which includes the *ACS code of ethics* (ACS, n.d.; ACS, 2011)*, ACS code of professional conduct* (ACS, 2014a)*, ACS ethics case studies* (ACS, 2014b)*,* several videos focusing on ethical dilemmas (ACS, 2016), and two ethics learning modules (ACS, 2012a, 2012b). In Canada, the professional society for the ICT industry, the Canadian Institute of Procurement and Supply (CIPS), provides members with access to an eLearning program and an online test to foster the commitment to ethical practice and "to build confidence in employers, suppliers and colleagues" (CIPS, n.d.).

Many of the skills frameworks examined in Chapter 2 and Chapter 3 of this report include the theme of ethics or ethical behaviour, e.g. *One Workforce* (Libraries SA, 2017), *Skills framework for Victorian public libraries* (b, Appendix 3), *Professional Knowledge and Skills Framework* (CILIP, 2021a), WebJunction's *Competency index for the library field* (Gutsche & Hough, 2014), *Competencies for librarians in Canadian research libraries* (CARL, 2020), *CAVAL competencies for academic and research librarians* (CAVAL, 2017), *SLA competencies for information professionals* (SLA, 2016), *BIALL professional skills framework* (BIALL, 2016), *AALL body of knowledge* (AALL, 2018), *FLICC foundational competencies* (FLICC, 2011), and *The ALA/AASL/CAEP school librarian preparation standards* (AASL, 2019). Ethical practice is widely assumed to be a core competency for library and information professionals.

In the health library sector, the Medical Librarians Association's *Competencies for lifelong learning and professional* success include the core principles which guide the professional commitment to quality information to support improved health across the community. The imperative for "irreproachable ethical standards" (MLA, 2017, p.1) is one of these core principles. The MLA has published a *Code of ethics for health sciences librarianship* where it is stated that "the health sciences librarian believes that knowledge is the *sine qua non* of informed decisions in health care, education and research" (MLA, 2010). The framework of ethical principles relates to the health librarian's responsibilities towards society, clients, the institution, the profession and one's self. The ethical

principles are presented as a series of guidance statements which "cannot and do not dictate conduct to cover particular situations". The element of trust therefore represents an inherent aspect of being a health information professional.

The concept of professionalism as "a combination of knowledge, skills, trustworthiness and altruism found in those who commit themselves to a life of service to others" (Beaton, 2010, p.2). It is argued that as "a professional" may potentially exercise power over the recipient of the service being provided, trust becomes an important part of the relationship: the professional should inspire "our trust that he or she is there to serve interests larger than him- or herself" (p.5). Trustworthiness in the context of healthcare has been interpreted as the transformation of competencies into practice to become 'entrustable professional activities' (EPAs). Although EPAs were first developed for physicians so that patients could be assured that they could 'trust' their doctor, interest has expanded across the dental profession, pharmacy and nursing. The relevance of the topic to the health informatics, digital, data, information and knowledge (HIDDIN) workforce is currently being examined. As members of the HIDDIN workforce are responsible for "developing information, knowledge and tools to assist clinicians and consumers to make shared decisions" (Ritchie et al., 2021, p.88), it is vital that decision-makers can place their trust in the activities that health information professionals perform.

The concepts of "the integrity of information" and "integrity in the management of information" are emphasised in many library associations' codes of ethics (e.g. ALIA, 2018a, 2018f; CILIP, 2018a; IFLA, 2012a). This ethical issue has been highlighted by Treddinick and Laybats (2020): "To some degree, information professionals are responsible for the integrity, accuracy, appropriateness and completeness of the information that they work with on a day-to-day basis" (p.7). The issue of fake news, misinformation and conspiracy theories has become an increasingly complex problem in recent years. While it is generally acknowledged that the level of responsibility will vary according to the work context, it has been argued that greater responsibility sits with information professionals working in the fields of legal, business, scientific or healthcare research.

As "personal integrity" is another characteristic which inspires trust, information professionals should demonstrate high standards of professional practice, including "integrity of relationships, professional responsibilities to clients, employers, and colleagues and subordinates, and wider responsibilities to the information and library profession including towards the development of others" (p.7). The majority of ethical codes highlight the critical importance of this principle.

The American Library Association (ALA) stands out as being the first library association to develop and adopt a code of ethics, with amendments introduced in 1961, 1995, 2008 and 2021 (ALA, 2021c). Beyond this, there was very little activity until the 1970s and 1980s (Koehler, 2003), but today over 60 national library associations have published their code of ethics. These have been collated and made accessible by IFLA (n.d.-b). It was not until 2012, however, that IFLA endorsed an international code, the *IFLA code of ethics for librarians and other information workers*, available as a long, comprehensive document (IFLA, 2012a) and as a shorter summary document (IFLA, 2012b). The code was drafted by a working group of the Freedom of Access to Information and Freedom of Expression (FAIFE) advisory committee, informed by a program of wide international consultation. Following its publication, the code was translated into many different languages, workshops were held to raise awareness about the value of ethical reflection, and case studies on ethical issues across the world were collected and shared.

The connections between ethical principles and professional conduct are clearly stated in the preamble: "The clauses of this code of ethics build on the core principles outlined in this preamble to provide a set of suggestions on the conduct of professionals" (IFLA, 2012a). These principles include:

- Librarianship is, in its very essence, an ethical activity embodying a value-rich approach to professional work with information
- The need to share ideas and information has grown more important with the increasing complexity of society in recent centuries and this provides a rationale for libraries and the practice of librarianship
- The role of information institutions and professionals, including libraries and librarians, in modern society is to support the optimisation of the recording and representation of information and to provide access to it
- Information service in the interest of social, cultural and economic well-being is at the heart of librarianship and therefore librarians have social responsibility.

The professional values of the contributing to the greater good and providing service to society are underscored. In addition, reference is made to the *United Nations Universal Declaration of Human Rights* which embodies the principles of freedom of expression, access to information, and information rights. The clauses of the code itself present a brief description of six individual ethical principles, then interpreted by a series of behavioural statements (IFLA, 2012b):

1. *Access to information*
   The core mission of librarians and other information workers is to ensure access to information for all personal development, education, cultural enrichment, leisure, economic activity and informed participation in and enhancement of democracy.
   To this end, library workers will:
   - Reject censorship in all its forms
   - Support provision of services free of cost to the user
   - Promote collections and services to potential users
   - Seek the highest standards of accessibility to both physical and virtual services.

2. *Responsibilities towards individuals and society*
   In order to promote inclusion and eradicate discrimination, librarians and other information workers ensure that the right of accessing information is not denied and that equitable services are provided whatever their age, citizenship, political belief, physical or mental ability, gender identity heritage, education, income, immigration and asylum-seeking status, marital status, origin, race, language, religion or sexual orientation.
   To enhance access for all, librarians:
   - Support people in their information searching
   - Assist them with their reading skills and information literacy
   - Encourage them in the ethical use of information (with particular attention to the welfare of young people).

3. *Privacy, secrecy and transparency*
   Librarians and other information workers:
   - Respect personal privacy, and the protection of personal data, necessarily shared between individuals and institutions
   - At the same time, they support the fullest possible transparency for information relating to public bodies, private sector companies and all other institutions whose activities affect the lives of individuals and society as a whole.

4. *Open access and intellectual property*
   Librarians and other information workers' interest is to provide the best possible access for library users to information and ideas in any media or format, while recognising that they are the partners of authors, publishers and other creators of copyright protected works. Librarians and other information workers:
   - Seek to ensure that both users' rights and creators' rights are respected
   - Promote the principles of open access, open source, and open licences
   - Seek appropriate and necessary limitations and exceptions for libraries and, in particular, seek to limit the expansion of copyright terms.

5. *Neutrality, personal integrity and professional skills*
   Librarians and other information workers are strictly committed to neutrality and an unbiased stance regarding collection, access and service. They:
   - Seek to acquire balanced collections
   - Apply fair service policies
   - Avoid allowing personal convictions to hinder carrying out their professional duties
   - Combat corruption
   - Seek the highest standards of professional excellence.

6. *Colleague and employer/employee relationship*
   Librarians and other information workers treat each other with fairness and respect. To this end they:
   - Oppose discrimination in any aspect of employment because of age, citizenship, political belief, physical or mental ability, gender, marital status, origin, race, religion or sexual orientation.
   - Support equal payment for equal work between men and women
   - Share their professional experience
   - Contribute to the work of their professional associations
   - Strive to earn a reputation and status based on their professionalism and ethical behaviour. They do not compete with colleagues by the use of unfair methods.

Further descriptive and illustrative examples of professional behaviour are presented in the full version of the code (IFLA, 2012a) and more detailed guidance on specific ethical issues is provided in a range of IFLA statements, including:

- *IFLA statement on libraries and intellectual freedom* (IFLA, 1999)
- *IFLA statement on censorship* (IFLA, 2019d)
- *IFLA statement on privacy in the library environment* (IFLA, 2015)
- *IFLA statement on libraries and open and good governance* (IFLA, 2020b)
- *IFLA statement on fake news* (IFLA, 2018c)
- *IFLA statement on digital literacy* (IFLA, 2017).

An examination of the various approaches to ethics adopted by different library associations highlights the interplay between professional values, ethics and conduct. ALIA has not published code of ethics *per se*, but IFLA's code has been formally endorsed (ALIA, 2018d). Since 2001, however, ALIA has published three related documents, all reviewed in 2018:

- *ALIA core values policy statement* (adopted in 2002) (ALIA, 2018a)
- *ALIA professional conduct policy statement* (adopted in 2001) (ALIA, 2018e)
- *ALIA member code of conduct* (adopted in 2012) (ALIA, 2020g).

The *ALIA member code of conduct* statement (ALIA, 2020g) focuses on the responsibilities of ALIA members to uphold the Constitutional Objects (ALIA, 2021g) and the core values of the association (ALIA, 2018b), and to adhere to the *ALIA professional conduct policy* (ALIA, 2018e). This policy stresses the library and information professional's responsibility to act at the highest level of integrity and to deliver the highest standards of service to their communities. Values, ethics and professional conduct are woven together in the declaration that library and information professionals "are members of a profession committed to act with integrity, ethics, trust, expertise and the promotion of the public good" (ALIA, 2018e).

Over the years, to provide extra context and depth to the issues, ALIA has also released a number of separate policy statements on some of the principles which are embraced by IFLA's code of ethics:

- *Copyright and intellectual property statement* (adopted in 2001) (ALIA, 2018f)
- *Statement on information literacy for all Australians* (adopted in 2001) (ALIA, 2006a)
- *Statement on libraries and literacies* (adopted in 1979) (ALIA, 2006b)
- *ALIA on online content regulation* (adopted in 1997) (ALIA, 2002)
- *ALIA open access policy statement* (adopted in 2014) (ALIA, 2018g)
- *Principles of access to public sector information* (adopted in 1999) (ALIA, 2019e).

The ethical principles included in the suite of IFLA and ALIA documents have been extracted and presented in Table 38. The principles contained in the codes and statements issued in other countries are listed as a comparison, i.e. New Zealand (LIANZA), the UK (CILIP), the US (ALA) and Canada (CFLA-FCAB).

Table 38: Ethical principles as identified by IFLA and various national associations

Ethical principle	IFLA	ALIA	LIANZA	CILIP	ALA	CFLA
Freedom of access to information	✓	✓	✓	✓		✓
Intellectual freedom	✓	✓	✓	✓	✓	✓
Resist censorship	✓	✓	✓	✓	✓	✓
Services free of cost	✓					✓
Promotion of collections and services	✓	✓			✓	✓
Accessibility of services	✓	✓			✓	✓
Diversity, equality & inclusion	✓	✓	✓	✓	✓	✓
Literacy	✓	✓				✓
Information literacy	✓	✓	✓	✓		✓
Digital literacy	✓	✓				✓
Ethical use of information	✓	✓	✓	✓		✓
Privacy & confidentiality	✓	✓	✓	✓	✓	✓
Protection of personal data	✓	✓	✓	✓	✓	✓
Transparency of public information	✓	✓				✓

Ethical principle	IFLA	ALIA	LIANZA	CILIP	ALA	CFLA
Accessibility of information	✓	✓	✓	✓	✓	✓
Principles of open access, open source, open licences	✓	✓				✓
Respect for intellectual property rights of creators	✓	✓			✓	✓
Respect for copyright	✓	✓			✓	✓
Respect for Indigenous cultural & intellectual property		✓				✓
Freedom from bias	✓	✓	✓	✓	✓	✓
Formulate & publish policies on library service	✓		✓		✓	✓
Distinguish between personal convictions & professional duties	✓	✓	✓	✓	✓	✓
Transparency, accountability & good governance	✓	✓	✓	✓	✓	✓
Maintain and enhance professional knowledge and skills	✓	✓	✓	✓	✓	✓
Strive for professional excellence	✓	✓	✓		✓	✓
Respectful relationships in the workplace	✓	✓		✓	✓	✓
Oppose discrimination in the workplace	✓				✓	✓
Pay equality	✓				✓	✓
Share professional experience	✓	✓		✓	✓	✓
Professional engagement	✓			✓		✓
Reputation of the profession	✓			✓		✓

CILIP's approach has been to develop a single document entitled the *Ethical framework* (CILIP, 2018a) which draws together ethical principles, professional conduct and core values. As noted earlier in this report, the beliefs and ideas included in the framework sit at the heart of the PKSB (CILIP, 2021a).

In New Zealand, ethical principles are presented in a number of documents released by the Library and Information Association of New Zealand Aotearoa (LIANZA):

- *LIANZA code of professional conduct* (LIANZA, 2003)
- *LIANZA privacy statement* (LIANZA, 2013c)
- *LIANZA statement on freedom of information* (LIANZA, 2020).

LIANZA is also currently reviewing their statements on censorship, barriers to access to information, and Indigenous knowledge management (LIANZA, 2021c). In Canada, there are currently two position statements relating to Indigenous peoples:

- *Position statement on library and literacy services for Indigenous (First Nations, Métis & Inuit) peoples of Canada* (CFLA-FCAB, 2016a)
- *Position statement on Indigenous Knowledge in Canada's Copyright Act* (CFLA-FCAB, 2018a).

Here in Australia, valuable guidance about the protocols relating to culturally sensitive records and collections is provided in the *Aboriginal and Torres Strait Islander Library, Information and Resource Network (ATSILIRN) Protocols for libraries, archives and information services* (ATSILIRN, 2012), the *Code of ethics for Aboriginal and Torres Strait Islander Research* (AIATSIS, 2020), the *Position statement: Aboriginal and Torres Strait Islander collections and services in NSLA libraries* (NSLA, 2021c), the *Guidelines for accessing sensitive collections* (SLNSW, 2021b) and the *Aboriginal and Torres Strait Islander cultural protocols* (University of Sydney Library, 2021bA). The Indigenous Archives Collective position statement on the right of reply to Indigenous knowledges and information held in archives (Indigenous Archives Collective, 2021) includes some content on ethical considerations of managing information – particularly in new information environments involving artificial intelligence and machine learning – and in the context of biased and incorrect information (K. Thorpe, personal communication, January 14, 2022). It is stressed that these ethical issues have become even more pressing in digital environments where collecting institutions have digitised archival records to make them accessible online (Indigenous Archives Collective, 2021).

The Canadian Federation of Library Associations – Fédération Canadienne des associations de bibliothèques (CFLA-FCAB) was formed in 2016, following the dissolution of the Canadian Library Association (CLA) the previous year. The *CFLA-FCAB code of ethics*, adopted in 2018, encapsulates the IFLA code (CFLA-FCAB, 2018b). In addition to the two documents relating to Indigenous knowledge, a number of ethical principles are discussed in greater depth in a series of position statements:

- *Position statement on diversity and inclusion* (CFLA-FCAB, 2008)
- *Position statement on intellectual freedom and libraries* (CFLA-FCAB, 2019)
- *Position statement on library services for multicultural communities* (CFLA-FCAB, 2016b)
- *Position statement on public access to the Internet* (CFLA-FCAB, 2016c)
- *Position statement on copyright: fair dealing* (CFLA-FCAB, 2018c)
- *Position statement on open access for Canadian libraries* (CFLA-FCAB, 2016d)

Most of these documents are reviewed and updated versions of the position statements originally developed by the CLA.

The American Library Association (ALA) has very recently reviewed and updated their code of ethics (ALA, 2021c). The code originally contained eight principles, but a ninth principle has been added to actualise the profession's belief in diversity, equity and inclusion, and address the challenges of the contemporary social justice agenda (ALA, 2021c):

> We affirm the inherent dignity and rights of every person. We work to recognize and dismantle systemic and individual biases; to confront in equity and oppression; to enhance diversity and inclusion; and to advance racial and social justice in our libraries, communities, profession, and associations through awareness, advocacy, education, collaboration, services, and allocation of resources and services.

The ALA highlights the fact that ethical dilemmas in the rapidly changing information environment will be unavoidable, and further guidance is offered through a series of resources:

- *Enforcement of the code of ethics* (ALA, 2019d)
- *Copyright: An interpretation of the Code of Ethics* (ALA, 2019e)
- *Conflicts of interest* (ALA, 2019f)
- *Ethics and social media* (ALA, 2019g)
- *Speech in the workplace* (ALA, 2019h).

Preer (2008) argues that "ethical conduct does not mean strict adherence to strict rules of behavior but rather the application of values where there is no fixed rule or no clear answer" (p.xiv-xv). Compared to some other professions, failure to comply with the association's code of ethics or code of conduct does not result in an investigation into professional misconduct. As librarianship is not a 'regulated' profession, i.e. where the members have some kind of practice licence that can be withdrawn, those who work in the information field have no enforceable duties and they cannot be subject to sanctions or expulsion from the profession. "With no enforcement authority, this reduces the IFLA code to persuasion and consensus building and aspirational rhetoric" (Trepanier et al., 2019, p.293). In the Q&A resource on enforcement of the code of ethics, the ALA states that "As a voluntary membership organization, ALA does not enforce the Code of Ethics for a variety of reasons. The Code states that the principles in the Code are "expressed in broad statements to guide ethical decision making. These statements provide a framework: they cannot and do not dictate conduct to cover particular situations" (ALA, 2019d). Therefore, the ALA recommends that libraries adopt the code of ethics as a policy, with enforcement then applied at the local, institutional level.

A number of studies have focused on a comparative content analysis of the codes of ethics published by national library associations: 18 case studies were presented by Vaagan (2002), the codes of 28 associations were examined by Shachaf (2005); four codes were reviewed by Koehler (2006), and 36 codes were studied by Foster & McMenemy (2012). The researchers all approached their topic from a different angle, but their findings revealed that librarians across the world shared the same or similar fundamental values: service, integrity, access to information, intellectual freedom, equality of users, preservation of intellectual heritage, literacy, and information literacy (Koehler, 2006). Those shared values were reflected in the codes of ethics – as shown in Table 39 – but they are presented with different shades of emphasis, depending on nationality, culture and field of practice. National and cultural differences are also evident in the qualifications pathways in the library and information profession: these are examined in the chapter that follows.

6.   Qualification pathways

In 2016, at the international level, the IFLA Section for Education and Training (SET) established a new working group: the Building Strong Library and Information Science Education (BSLISE) Working Group. The BSLISE Working Group set out to develop a clearer understanding of the qualification and certification requirements for entry into the LIS profession in different countries and regions of the world so that serious consideration could be given to identifying credential equivalencies across geographic borders. The ultimate goal would be to develop "an international quality assurance framework that will promote educational standards in LIS, on a par with current socio-political and technological developments and inclusive of regional and national contexts" (Chu & Raju, 2018, p.3). In an increasingly globalised economy with international worker mobility, the transferability of LIS qualifications is important to many library and information professionals. The topic had long been of interest to IFLA SET, with draft international guidelines for equivalency and reciprocity of qualifications released by Weech and Tammaro in 2009.

Data collected in a survey conducted by BSLISE revealed a range of approaches across the world in terms of authority or responsibility for the administration of quality assurance standards for professional entry into the LIS field. The findings revealed that the most common approaches saw authority sitting with government agencies, professional associations or national libraries. In an earlier IFLA project, Dalton and Levinson (2000) outlined three models for establishing and maintaining education standards: governmental monitoring of the equivalency of qualifications; internal quality assurance of individual course/departmental standards; and non-governmental (professional) accreditation/approval processes.

This last model, characterised by accreditation by professional associations, is the common one in English-speaking countries like Australia, New Zealand, the UK and the US, although the processes in each country are not the same. In many other countries where courses are accredited, the focus on quality assurance tends to be from an 'academic' perspective, without having to meet any 'professional' criteria (Dalton & Levinson, 2000). A comparative review of the accreditation frameworks for library and information qualifications in Australia, New Zealand, the US and Canada was undertaken by Gibbons and White (2019). They note that although accreditation models may vary, the process generally involves both retrospective evaluation and prospective strategy and planning. Accreditation therefore represents a powerful way to legitimise the LIS curriculum within academia and the profession.

In the early 2000s, the iSchool movement was established in the US by several library and information science schools, linking into the notion of "a globalized LIS profession and education and a focus on information as the primary knowledge base" (Gibbons & White, 2019, p.252). The iSchools' objectives were to expand their academic programs into a wider field of information studies, to reach a broader selection of students and to prepare professionals for work beyond libraries (iSchools, n.d.-a). The disciplinary strength of the iSchools has been described as the transdisciplinary relationship and interplay between information, technology and people. It is argued that "expertise in all forms of information is required for progress in science, business, education, and culture" (Larsen, n.d.), with emphasis placed on the use and users of information.

Today, informal collaborative arrangements are in place between the iSchools, the Association for Library and Information Science Education (ALISE) and the Association for Information Science & Technology (ASIS&T). Working together as the iFederation, the group "envisions a future in which the iSchool movement has spread around the world, and the information field is widely recognized for creating innovative systems and designing information solutions which benefit individuals, organizations and society" (iSchools, n.d.-b). Today, there are over 100 iSchools across the world: 48 in North America, 4 in Canada, 2 in Latin America, 26 in Europe, 8 in the UK, 29 in Asia, 2 in New Zealand and 3 in Australia (iSchools, n.d.-c).

The expanded definition of 'information professional' has resulted in some tensions in terms of academic program accreditation. An association's accreditation processes are generally based on an accepted skills frameworks: in the UK, the PKSB (CILIP, 2021a) embraces the skillsets required for practice across the information, knowledge, data and data professions, while in the US, the ALA's core competencies are more closely aligned with professional practice in the library sector. This has resulted in a lack of clarity in the evolving landscape of library schools, library science degrees, iSchools and information science programs (Weech, 2019): some iSchools in the US have ALA accreditation, others do not, while in the UK, all eight iSchools are accredited by CILIP.

It goes beyond the scope of this paper, however, to analyse the role, function and mechanics of the different accreditation models. A study of quality assurance in library and information education, commissioned by ALIA in 2013, provides detailed discussion on the topic, as well as the benefits and drawbacks of accreditation, at that point in time (Hallam, 2013). This chapter of the report outlines the different pathways that are available for entry into the library and information profession, some of which involve accreditation while others do not. The discussion considers the current pathways in Australia, New Zealand, the UK and the US. A comparative perspective is also presented with a brief introduction to some new qualification pathways that have been introduced by other professions, including accounting, law and architecture.

6.1   Qualification pathways in library and information science in Australia

In Australia, ALIA acts as the standards body for the library and information profession and is responsible for the accreditation of the vocational courses for library technicians, generally offered by colleges of Technical and Further Education (TAFE), and the higher education courses (undergraduate and postgraduate) leading to qualifications as a librarian or information specialist. As noted in the earlier sections in this report where the skills frameworks for archives and for records management and information management were discussed, the Australian Society of Archivists (ASA) and the Records Management Professionals of Australasia (RIMPA) are also involved in course accreditation. Arrangements are in place for joint accreditation by ALIA, ASA and RIMPA, but as Gibbons and White (2019) report, each association may accredit (or formally recognize in the case of RIMPA), programs separately, "so each program can be accredited by all three or by only one or two" (p.247).

There is clear evidence that the number of library and information courses is in decline in this country. The challenges facing LIS education in this country have long been discussed, with concerns expressed about the sustainability of a perceived 'over-supply' of courses, given Australia's population size, compared with, for example, UK, US or Canada. The niche characteristics of the

courses, the lack of any clear identity resulting from the distribution of courses across many different academic disciplines and/or faculties, and the implications of the relatively low student and staff numbers have all been acknowledged as factors that were likely to impact on the sustainability of LIS education (Burford et al., 2015; Hallam, 2007; Hallam & Calvert, 2017; Harvey, 2001; Harvey, 2011; Harvey & Higgins, 2003; Kennan et al., 2018; Myburgh, 2003; Partridge & Yates, 2012; Partridge et al., 2011; Pawley et al., 2001; Poynton, 2008; Willard & Wilson, 2004; Willard & Wilson, 2016).

At the end of 2021, there were six ALIA-accredited academic institutions (with three of the programs currently in teach-out mode prior to course closure in 2024), compared to ten institutions in 2010. The number of ALIA-accredited VET training dropped from 21 to 14 (Figure 7).
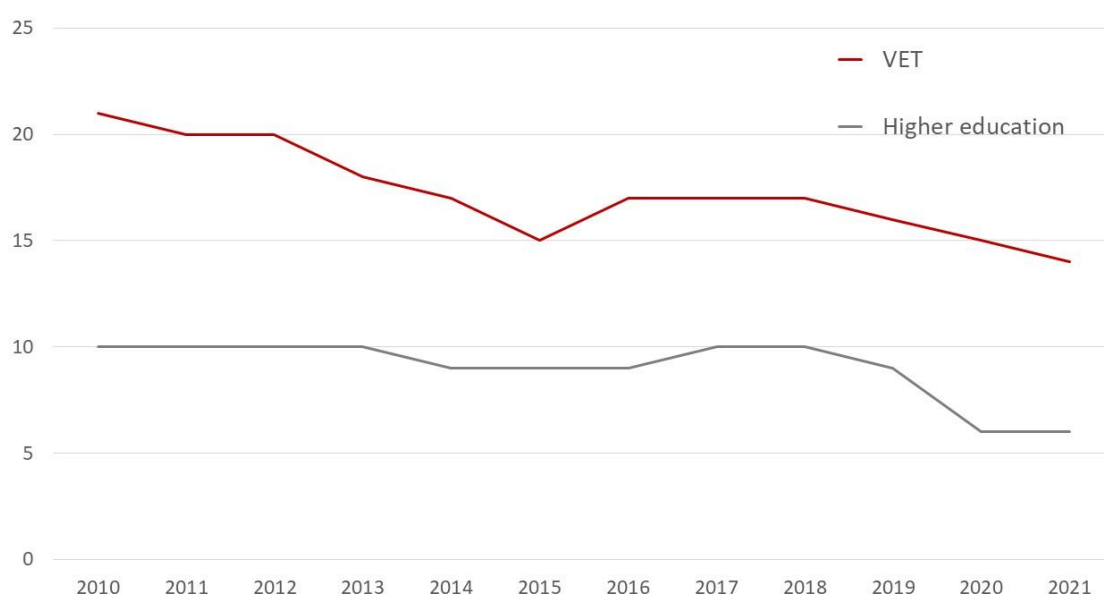
Figure 7: Number of ALIA accredited institutions (higher education and VET) (ALIA, 2021h)

Beyond the courses which lead to accredited qualifications, there are also several entry-level opportunities. These are included in the overview of the current pathways into the library sector.

6.1.1 Vocational education and training

No formal qualifications are required for people working as library assistants, however vocational certificates courses do offer a training avenue for people who are employed in a library or who are interested in finding work in the field. To become a library technician, people need to successfully attain a Diploma in Library and Information Services.

Diploma of Library and Information Services

The qualifications to become a library technician in Australia are underpinned by the BSB550520 Diploma of Library and Information Services training package (training.gov.au, 2020). This new training package, released in October 2020, supersedes the BSB52115 training package. Training providers have an 18-month transition period (to April 2022) to update their scope of registration

and to refresh the training materials. As it is a national training package, training providers, generally TAFE colleges, are required to deliver the same units of competency, which are based on a set of core competencies and a range of elective competencies. The requirements are for students to complete the four core units of competencies and 12 elective units of competency, which are presented in three groups: *Group A: Library services*; *Group B: Information services skills*; and *Group C: Transferable skills*. Furthermore, to meet ALIA's accreditation requirements, students are required to complete at least 70 hours of work placement.

The four core competencies are:

- BSBINS407 Consolidate and maintain library industry knowledge
- BSBINS503 Monitor compliance with copyright and licence requirements
- BSBINS602 Extend your own information literacy skills to locate information
- ICTSAS432 Identify and resolve client ICT problems.

The previous iteration of the training package had seven core units; the topics of customer service, public programming and teamwork have been moved into the elective streams.

The elective competencies in *Group A: Library services* encompass areas such as information retrieval, information organisation, collections, library management systems, community and stakeholder relationships, and promoting literature and reading. *Group B: Information services skills* encompass the opportunities in the fields of information, knowledge and data management, archives, conservation and preservation. In *Group C: Transferable skills*, students are introduced to a wide range of skillsets relating to customer service, data analysis, digital solutions, teamwork, project work, workplace health and safety, personal and professional development, on-the-job training and group-based learning.

The new training package places less emphasis on a more general business environment, e.g. business continuity planning, risk management, disaster management and budgeting, which may be considered higher level or managerial responsibilities. The changes that have been introduced reflect the trend towards more community-focused library services, the move away from working with hardcopy collections, more distributed technologies, and the importance of ongoing learning. The units of competency associated with web development, advanced computer and software applications, and social media activities have been replaced by concepts such as the organisation's presence, digital solutions and awareness of cybersecurity issues. It was also noted that a group of detailed units relating to cataloguing activities have also been removed from the training package.

The training package requirements indicate that seven elective units should be selected from Group A, one from Group B, and two from Group C, with free selection of the additional two units. The availability of elective competencies in a specific Diploma program may depend on the training provider and the staff who deliver and assess the competencies.

Currently, accredited courses (offered either in face-to-face, online and blended modes) are available across the country (ALIA, 2021i):

- New South Wales
  - TAFE NSW Sydney, Ultimo campus
    - Also available to residents of the ACT, Northern Territory and Tasmania
  - TAFE NSW Mount Druitt
  - TAFE NSW Newcastle
  - TAFE NSW (TAFE Western Connect)
  - TAFE NSW Digital (North Coast)
- Queensland
  - TAFE Queensland Brisbane region
  - TAFE Queensland Online Learning (TQOL)
- South Australia
  - TAFESA Adelaide City campus
- Victoria
  - Box Hill Institute
  - Chisholm (Cranbourne)
  - Swinburne University of Technology
  - Victoria University Polytechnic
- Western Australia
  - North Metropolitan TAFE (Perth).

The Diploma course is also offered by Pacific Technical and Further Education (Pacific TAFE) which is the vocational stream of the University of the South Pacific. ALIA provides direct links to the colleges' course information (ALIA, 2021i).

An Advanced Diploma of Library and Information Services used to provide a qualifications pathway to become a senior library technician, however the training package was terminated in 2017.

Certificates in Library and Information Studies

Vocational certificates in Library and Information Services courses are offered by a small number of TAFE colleges: Certificate III (BSB30420) is made up of 12 units of competency and Certificate IV (BSB40720) has 14 units. Commonly, students are those who have left secondary education (Years 10-12) and have found employment in libraries.

Library apprenticeships and traineeships

In this country, a national apprenticeship scheme is organised by the Commonwealth Department of Education, Skills and Employment (DESE), through a group of Apprenticeship Network Providers (ANP), to coordinate the agreements between the employer, employee and registered training organisation (RTO). The apprenticeship programs themselves are administered at the State or Territory level. Apprenticeships have been described as "the gold standard of integrated workplace learning" (VET:express, 2020) where employers play a vital role in the development of the employee's skills

ALIA has investigated the opportunities for and barriers to apprenticeships and traineeships in the library and information sector. As part of this process, a survey was conducted of ALIA's Institutional Members (ALIA, 2021h), with questions posed about the prevalence of apprenticeships and/or traineeships.

It was found that around 20% of respondents (n=131) employed trainees or apprentices, with the highest numbers reported in public and NSLA libraries (ALIA, 2021h). The arrangements were often

coordinated at the organisational level (local authority or university) rather than at the library level, but the traineeships were delivered by the library. In the subsequent consultations, key stakeholders noted that vocational qualifications were an important element of the placements. The values of successful initiatives involving traineeships for Aboriginal and Torres Strait Islanders were acknowledged. While there was interest across the library and information sector to promote the value of traineeships and apprenticeships and to encourage people to gain formal qualifications, it was acknowledged that the administration of traineeships at the State level would present challenges for ALIA to introduce a national scheme.

6.1.2   Higher education

As noted above, the availability of LIS academic programs in Australia has been declining for several years. The majority of study options available are postgraduate programs, with just one university continuing to accept students at the undergraduate level.

Undergraduate programs

While there were six undergraduate courses in Australia in 2005, today, only one undergraduate LIS program is available, the Bachelor of Information Studies (with specialisations), offered by Charles Sturt University (CSU) (CSU, 2021g). The specialisations include:

- Librarianship
- Children's librarianship
- Information management
- Records and archives management.

CSU has a number of admission pathways into the undergraduate program which allow students who have a vocational qualification (Diploma or the former Advanced Diploma) to apply for credit for their earlier studies. These arrangements also include credit opportunities for international students residing in, for example, Canada and Hong Kong. Recognition of prior learning (RPL) may be granted to eligible applicants. Beyond this, Aboriginal or Torres Strait Islander students can also apply for learning support through the *Connections – First Nations Direct Entry Program* (CSU, 2021h).

Until recently, Curtin University offered the Bachelor of Arts (Librarianship and Corporate Information Management), but there is no further student intake and the program is in teach-out mode (ALIA, 2021j).

Postgraduate coursework programs

At the present time, accredited postgraduate courses are offered by five universities, with one course (Curtin University) also available under the flexible arrangements of Open Universities Australia. The courses include (ALIA, 2021j):

- Charles Sturt University
    - Master of Information Studies (with specialisations)
- Curtin University
    - Graduate Diploma in Information and Library Studies
    - Master of Information Management

- Monash University
  - Master of Business Information Systems
- RMIT University
  - Master of Information Management (*no further intake)
  - Graduate Diploma of Information Management (as exit point from the Master's)
- University of South Australia
  - Graduate Diploma of Information Management
  - Master of Information Management.

Links to all the course programs are provided on the ALIA website (ALIA, 2021j).

Information is available about the industry specialisations available to students enrolled in the postgraduate Master of Information Studies course offered by CSU (CSU, 2021i):

- Children's librarianship
- Data management
- Information architecture
- Information management
- Leadership
- Librarianship
- Records and archives management.

Students at CSU may exit from the Master's program with a Graduate Diploma of Information Studies (i.e. this course is not separately accredited by ALIA). CSU also offers a Graduate Certificate in Information Studies as an introduction to the library and information field, where students study *INF404 Foundations for Information Studies* (CSU, 2021j) plus three other subjects chosen from the core and elective subjects offered in the Master's curriculum.

Here in Australia, three academic institutions are members of the iSchool movement: the School of Media, Creative Arts & Social Enquiry, Curtin University; the Faculty of Information Technology, Monash University; and the Department of Computing and Information Systems, The University of Melbourne. ALIA-accredited programs are available at Curtin University and Monash University.

Higher degrees by research

Beyond the postgraduate coursework programs which support entry into the profession, there are opportunities for practicing library and information professionals to undertake research studies at the Master's and PhD levels. The research perspectives are generally twofold: theoretical research and applied research, or research-in-practice. The term 'practitioner-researcher' is used to describe a professional who undertakes research in the workplace to investigate a specific problem. While the research activities may or may not be part of academic studies, there are clearly opportunities to link the work to a higher degree qualification.

 The value of being practitioner-researcher was discussed by Kaeding (2016) who emphasised the importance of ongoing professional development being an essential component of the role of a practicing library and information, at all career stages. It was argued that the concept of professionalism would be enhanced by a stronger culture of practitioner research which provides the opportunity for librarians to develop a deeper understanding of the relationship between theory and practice within the discipline. ALIA conferences include a research stream, the Australasian

Conference on Research Applications in Information and Library Studies (RAILS) is generally an annual event, and the international Evidence Based Library and Information Practice (EBLIP) conference has been held twice in Australia.

It is felt that there should be a broader recognition of the role of research in the library and information profession. To this end, ALIA partnered with Charles Sturt University to run the *Relevance 2020: LIS research in Australia* project: six consultative events were held in the state capitals to discuss the opportunities for and the barriers to collaboration between academics and practitioners (Nguyen, 2017; Nguyen & Hider, 2018). The ALIA Research Advisory Committee (RAC) underscores the importance of research in the profession by providing advice to the ALIA Board "on all aspects of LIS research theory, policy and practice; matters of interest and concern to ALIA Members relating to research, and the awarding of research grants" (ALIA, 2021k). The research grants provide financial support members undertaking research projects, e.g. the Anne Harrison Award for health librarians, the Twila Ann Janssen Herr Research Award for Disability Services and the Library Technician Research Award. Opportunities to study for a Master's degree by research or a PhD are available at the universities offering coursework programs.

Specialist fields

As noted, CSU offers a number of career specialisations in the Master's, Graduate Diploma and Bachelor courses. Beyond these options, specific programs are available for teacher librarianship, archives and records management.

Teacher librarians

The principal pathway to becoming a teacher librarian is to complete a postgraduate teacher librarianship course. Applicants must hold either a Bachelor of Education, or a Bachelor degree in another discipline plus "an end-on integrated teaching qualification (such as a Graduate Diploma, or Bachelor of Teaching Secondary)" (CSU, 2021k). Qualified teacher librarians should also meet their State/Territory teacher registration requirements (M. Merga, personal communication, February 2, 2022). Currently, there is currently only one ALIA-accredited postgraduate qualification in teacher librarianship (ALIA, 2021l): the Master of Education (Teacher Librarianship) offered by CSU. In practice, schools may employ staff who hold a library or information specialist qualification, or a library technician diploma to work in the library.

Archives and Records Management

Pathways into a career as archivist or recordkeeper include the following (ASA, 2021c):

- ASA Accredited Member (postnominal ASAAM)
  - An individual holding a university qualification in a course accredited by the ASA (or equivalent)
- ASA Recognised Professional (postnominal ASARP)
  - An individual holding a university qualification and a minimum of two years work experience at a professional level in archives and/or recordkeeping
- ASA Accredited Professional (postnominal ASAAP)
  - An individual holding a university qualification in a course accredited by the ASA (or equivalent) and a minimum of five years of work experience at a professional level in archives and/or recordkeeping.

The partnership arrangements in place between ALIA, ASA and RIMPA support the joint accreditation process for academic programs in archival studies. The four universities that have jointly-accredited programs are listed on the ASA website (ASA, 2021b):

- Charles Sturt University
    - Bachelor of Information Studies (Records and Archives Management)
    - Master of Information Studies (Records and Archives Management)
- Curtin University
    - Graduate Diploma in Records Management and Archives
- Monash University
    - Graduate Diploma in Information and Knowledge Management (Archives and Recordkeeping)
    - Master of Business Information Systems (Archives and Recordkeeping)
    - Master of Business Information Systems (Archives and Recordkeeping/Library and Information Science)
- University of South Australia
    - Graduate Diploma in Information Management (Archives and Records Management)
    - Master of Information Management (Archives and Records Management).

The ALIA website only includes the full Master's course name as the accredited course, but students may apply to exit from the course with a Graduate Diploma. The ASA website, on the other hand, lists all educational programs. The RIMPA website (2021b) was found to be a little confusing as it groups Australian and New Zealand Bachelor and Master's courses under the heading 'Accredited degrees', but Graduate Diplomas under the heading 'Diplomas'. This grouping also includes the Graduate Certificate in Information Studies (CSU) (mentioned above) and a vocational program, the Diploma in Records and information Management, offered by the Open Polytechnic Kuratini Tuwhera in New Zealand (Open Polytechnic, 2021a). The RIMPA website indicates that the Bachelor of Information Technology (Information Services) at Edith Cowan University (ECU) is an accredited course, but the university website states that the Bachelor of Information Technology is accredited by the Australian Computer Society (ACS) (ECU, 2021). No mention is made of the 'Information Services' specialisation.

6.1 3   Professional recognition of library and information qualifications

When admitting new members, ALIA, like most other professional associations, differentiates between the academic qualifications attained through attendance at Australian colleges and universities, and those attained overseas.

Professional recognition of Australian qualifications

Upon successful completion of an ALIA-accredited vocational LIS diploma course, people can join ALIA as a Library Technician member, with the postnominal *ALIATec*, while graduates from a higher education LIS course can become Associate members of the association, using the postnominal *AALIA*. A further category of membership is the Allied Field category which recognises personal members who hold an academic qualification in a field other than LIS and who are working specialist, media or IT manager, or social worker. As members, the postnominal is simply *Allied Field*.

There is also a pathway to become an Associate or Library Technician member of ALIA through 'widened eligibility'. Existing personal members of ALIA who have completed an Australian LIS

qualification that is not accredited or have completed a qualification with a substantial component of LIS studies, and also have evidence of professional competence, may apply for an individual assessment of their qualifications, disciplinary knowledge, experience in the LIS sector, and their professional development activities and achievements. The ALIA Board also confers Fellowships (*FALIA*) on members who have made a distinguished contribution to the profession.

Every new ALIA members (*AALIA*, *ALIATec* and *Allied Field*) is automatically enrolled in the ALIA CPD Scheme and after successfully completing the first year of CPD (minimum 30 hours), the member is accepted as a *Certified Professional (CP)* member. This enables the use of the additional postnominal CP, thus *AALIA (CP)*, *ALIATec (CP)* and *Allied Field (CP).* After five years of recording CPD activity, professional members may apply for the status of *Distinguished Certified Professional.* The ALIA CPD scheme is discussed in more detail in section 8.1.1 of this report.

Professional recognition of overseas qualifications

Reciprocal arrangements are in place with four other national associations, whereby the relevant accredited qualifications will be automatically recognised by ALIA:

- New Zealand: Library and information Association of New Zealand Aotearoa (LIANZA)
- UK: Chartered Institute of Library and Information Professionals (CILIP)
- Ireland: Library Association of Ireland (LAI)
- USA: American Library Association (ALA).

Prospective members with qualifications from other countries may apply to ALIA for professional recognition of the academic qualifications, as long as they are Australian residents. People who are not Australian residents are required to request an assessment of their qualification and experience by VETASSESS, the Australian government's skills assessment provider.

6.2   International qualification pathways in library and information science

A comparative perspective is provided with an overview of the qualification pathways prescribed and managed by LIANZA in New Zealand, CILIP in the UK, and the ALA in the US and Canada.

6.2.1 Library and Information Association of New Zealand Aotearoa (LIANZA)

Accredited LIS qualifications are available at two academic institutions in New Zealand:
- Victoria University of Wellington (VUW)
  - Master of Information Studies
  - Postgraduate Diploma in Information Studies
  - Postgraduate Certificate in Information Studies
- Open Polytechnic Kuratini Tuwhera
  - New Zealand Diploma in Library and Information Studies (Level 5)
  - Bachelor of Library and Information Studies (there are also Bachelor of Arts and Bachelor of Applied Science programs with LIS majors)
  - New Zealand Certificate in Library and Information Services for Children and Teens (Level 5)
  - Graduate Certificate in Library and Information Leadership.

As the VUW courses are all postgraduate, applicants require a Bachelor degree with Honours or a Master's degree, or extensive professional experience (VUW, 2021). The Master's and Graduate Diploma degrees are recognised by LIANZA for professional registration under Route A (see below).

The courses offered by the Open Polytechnic include the vocational Diploma and the higher education Bachelor programs (Open Polytechnic, 2021b). The Bachelor degree is recognised by LIANZA for professional registration. The Certificate in LIS for Children and Teens is recognised by the School Library Association of New Zealand Aotearoa (SLANZA) (Open Polytechnic, 2021c).

Information is provided on the SLANZA website to advise that the association has a number of "approved library education providers", including (SLANZA, 2021):

- Open Polytechnic Kuratini Tuwhera
- Victoria University of Wellington
- Te Wānanga-o-Raukawa
- Charles Sturt University.

Te Wānanga-o-Raukawa is an educational institution for Māori students. It offers an information-focused qualification, Poutuarongo Puna Maumahara (Bachelor of Information Management), although it has been noted that the market for the course is limited as students require "some fluency in te reo Māori (Māori language), along with 'a strong desire to be bilingual and have the support of a hapū or iwi [tribal groups]'" (Chawner, 2015, p.S18).

In New Zealand, pathways into the library and information profession are closely aligned with the VUW and Open Polytechnic qualifications. Beyond this, LIANZA has a Professional Registration scheme, launched in 2007. The goals of the scheme are (LIANZA, 2021d):

- To increase the standing of the Library and Information profession in New Zealand
- To recognise professional excellence and continuing professional development
- To provide a mechanism by which employers can coach and develop their professional staff
- To provide an assurance for future employers, both in New Zealand and overseas, that the registrant meets professional standards of competency in the body of knowledge and ethics required for library and information work.

Professional registration – with the postnominal RLIANZA – is open to all LIANZA members, as well as members of SLANZA and the associations of law librarians, music librarians and theological librarians. The LIANZA Professional Registration Board has oversight over the process.

LIANZA outlines three pathways to professional registration (LIANZA, 2021d):

- Route A – a recognised New Zealand library and information qualification
- Route B – a recognised overseas library and information qualification
- Route C – other circumstances.

Route A – a recognised New Zealand library and information qualification

For this 'local' pathway to professional registration, a New Zealand university level qualification is required:

- Victoria University of Wellington (VUW)
  - PhD in Information Studies
  - Master of Information Studies
  - Postgraduate Diploma in Information Studies
  - Postgraduate Certificate in Information Studies

- Open Polytechnic Kuratini Tuwhera
  - Bachelor of Library and Information Studies.

It is noted that no BOK mapping is required for Route A.

Other New Zealand graduate qualifications may be approved by the LIANZA Board where it can be shown the qualification reflects the BOK criteria, for example a related discipline such as information technology (IT), information studies (IS), archives, records management, or Māori information management . This would include studies completed at the Te Wānanga o Raukawa Heke Puna Maumahara (Diploma in Information Management) and Poutuarongo Puna Maumahara (Bachelor of Māori and Information Management) (A. Pickering, personal communication, January 14, 2022).

Route B – a recognised overseas library and information qualification

LIANZA recognises overseas qualifications at Bachelor level or above, as recognised through the reciprocal arrangements with the following associations:

- Australian Library and Information Association (ALIA)
- Chartered Institute of Library and Information Professionals (CILIP)
- American Library Association (ALA)
- Canadian Library Association (CLA).

Note: the Canadian Library Association (CLA) was dissolved in 2015; the Canadian Federation of Library Associations – Fédération Canadienne des Associations de Bibliotèques (CFLA-FCAB) was established in 2016. In North America, the ALA is responsible for course accreditation in both the US and Canada.

LIANZA states that any library and information management qualification attained in other countries should be approved by the Professional Registration Board and mapped against the BOK. The qualification should also be accompanied by an official New Zealand Qualifications Authority (NZQA) International Qualifications assessment to confirm that it is at graduate level or above.

Route C – other circumstances

LIANZA explains how Professional Registration candidates, if they do not meet the requirements for Route A or Route B, should develop their application to the Board. There are two potential approaches:

- Individual with a NZ qualification in library and information science predating 2007
  plus 3 or more years in the profession
- Individual with a qualification at a minimum of Bachelor's level (in any discipline)
  plus 3 or more years of experience in the profession.

The actual academic qualification is less important than the ability of applicants "to effectively map your education and experience against the BOK" (LIANZA, 2021d). At this point in time, there is no reliable data about the introduction of Route C might have had on LIANZA's membership profile.

BOK mapping involves applicants reviewing their study, career and other experiences to identify relevant examples that provide evidence of the knowledge and skills that are presented in the BOKs (LIANZA, 2021a). The evidence should be structured around a reflection on their understanding of the BOK, with examples of the personal application of the knowledge and skills in their professional practice, as illustrated in Table 39.

Table 39. Example of mapping BOKs against your career (LIANZA, 2021a)

BOK	My understanding	Personal application
BOK 7 Application of information and communication technologies	This BOK encompasses the ever-growing application of technology in a library environment. In my experience the variety of technologies being used to enhance our services has and will only continue to increase. Librarians have always been keen users of technologies that assist us to organise information and make it accessible. The advent of the Internet created a whole new avenue for making information available directly to the public.	Project manage LMS migration. Installation of satellite connectivity on mobile libraries. Introduction of tablet devices for staff use. Preparation of a report to council leadership on RFID.

The current cost of Professional Registration is NZ$57.50 for the application and NZ$115.00 for the annual Professional Registration status. The annual LIANZA membership fees are also to be paid.

A decision flowchart (LIANZA, 2021d) has been developed to help LIANZA members and Professional Registration candidates understand the requirements and steps to follow (Figure 8).
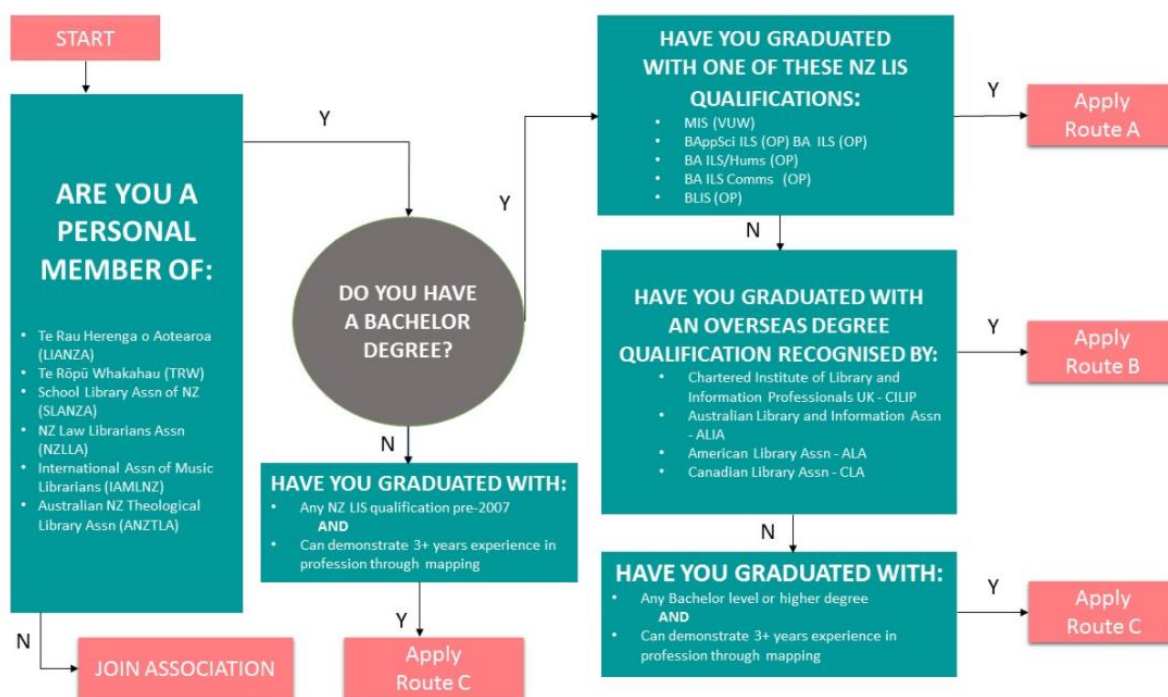
Figure 8. LIANZA Professional Registration decision flowchart (LIANZA, 2021d)

Revalidation of Professional Registration is required every three years. The revalidation process is discussed in more detail in Chapter 8 of the report.

6.2.2 Chartered Institute of Library and Information Professionals (CILIP)

In the UK for many years, the principal pathway into the profession has been through the successful completion of a course of study that has been accredited by CILIP. The association describes itself as "the 'regulatory authority' for people working in knowledge, information and libraries" (CILIP, 2020a). As part of the S*trategic Review 2019/2020* (CILIP, 2020b), CILIP considered seven program strands to measure progress towards a five-year goal of ensuring professional skills and ethical behaviour were central elements of service provision to the wider community. One program strand focused on 'promoting professional excellence', with CILIP's course accreditation activities and the professional registration program identified as critical factors.

The role of CILIP accreditation is to ensure that an academic provider, whether a library school or an iSchool, "delivers quality-assured teaching and learning, founded in evidence, best practice and the principles of Library and Information Science and aligned to the current and future needs of employers" (CILIP, 2020a). It is argued that "a CILIP accredited program is the best preparation for professional practice" (CILIP, 2021d).

CILIP's PKSB is the principal tool used in the review and assessment of academic programs (CILIP, 2021a): this skills framework was examined in section 2.3 of this report. Currently, 24 academic institutions are accredited, with 14 in the UK and 10 overseas (CILIP, 2021d):

United Kingdom
- Aberystwyth University
- City, University of London
- Coleg Llandrillo
- Cranfield University
- Manchester Metropolitan University
- Ministry of Defence
- Northumbria University (Newcastle)
- The Robert Gordon University (Aberdeen)
- University College London
- University of Edinburgh
- University of Glasgow
- University of Sheffield
- University of Strathclyde (Glasgow)
- University of the West of England (Bristol)

International
- Chulalongkorn University (Thailand)
- College of Basic Education (Kuwait)
- Middle East College (Oman)
- Nanjing Agricultural College (China)
- NUIST (China)
- South China Normal University
- Sultan Qaboos University (Oman)
- Sun Yat-Sen University (China)

- Technische Hochschule Köln (Germany)
- The University of Hong Kong (China)
- Ulster University.

Seven of the accredited UK academic institutions have iSchool status:
- Manchester Metropolitan University
- Northumbria University (Newcastle)
- The Robert Gordon University (Aberdeen)
- University College London
- University of Glasgow
- University of Sheffield
- University of Strathclyde.

There is an interesting distribution of courses with a total of 57 accredited courses. In the UK, six are undergraduate programs, 27 are postgraduate programs; internationally, 15 are undergraduate courses, and nine are postgraduate courses.

Professional Registration

The diverse pathways into the library, information and knowledge professions are outlined in CILIP's Professional Registration scheme which is managed by the Professional Registration Panel, made up of 15 members drawn from the different professional sectors. There are three levels of professional registration, as explained with the descriptors on the CILIP website (CILIP, 2021e):

- *Certification*
  - "If you are at the start of your career and want to gain recognition of the knowledge and skills you have developed, then Certification is perfect for you"
- *Chartership*
  - "Demonstrate to employers that you have achieved the gold standard as an information professional by becoming a Chartered member of CILIP"
- *Fellowship*
  - "Fellowship is the highest level of professional registration and recognises your work leading innovation and change, and your contributions to the sector, your organisation or the public."

Certification

Certification is for members at an early stage of their professional career who wish to demonstrate their commitment to the information services sector and to professional development (CILIP, 2021f). The PKSB plays a central role, as applicants are required to use the tool to undertake an assessment of their knowledge and skills and then identify the key areas for learning and development. With help provided in an explanatory guide (CILIP, 2020c), applicants are asked to compile a portfolio that documents the relevant evidence mapped to three assessment criteria relating to personal performance, organisational context and knowledge of the wider professional context (CILIP, 2021f):

1. IDENTIFY areas for improvement in your personal performance, UNDERTAKE activities to develop skills and enhance knowledge
2. CONSIDER the organisational context of your service and EXAMINE your role within the organisation
3. ENHANCE your knowledge of information services in order to understand the wider professional context within which you work.

Library and information professionals who have been awarded Certification may use the postnominal letters *ACLIP*.

Chartership

Chartership is the level of Professional Registration which reflects a person's more substantial responsibilities and professional experience (CILIP, 2021g). Chartership is not dependent on any specific academic qualifications: it is open to all members of CILIP, with the Chartership journey based on a self-assessment of the individual's knowledge and skills as delineated in the PKSB (CILIP, 2021a), with the goal of achieving broader representation in the membership. To date, no information has been systematically gathered about the impact of the move away from the qualifications-based membership pathway to the more flexible experience-based professional registration avenue, not about how the pandemic might have affected the number of Chartership applications.

The Chartership application process once again involves reflective evaluation, learning and development and creating a portfolio of evidence, with more robust assessment criteria:

1. IDENTIFY areas for improvement in your personal performance, UNDERTAKE activities to develop skills, APPLY these in practice and REFLECT on the process and outcomes
2. EXAMINE the organisational context of your service, EVALUATE service performance, SHOW THE ABILITY to implement or recommend improvement and REFLECT on actual or desired outcomes
3. ENHANCE your knowledge of the wider professional context and REFLECT on areas of current interest.

A guide to support the application for Chartership is available (CILIP, 2020d). CILIP stresses that Chartership should be a career-long investment: "we recommend that you revalidate annually to demonstrate your commitment to CPD" (CILIP, 2021g). Chartered professionals use the postnominal *MCLIP* and their names are included in the *CILIP register of practitioners* which gives the initial date of their award and the date of the most recent revalidation.

Fellowship

Fellowship represents the highest level of Professional Registration, designed for members who "can evidence substantial achievement in professional practice and have made a significant contribution to all or part of the information profession" (CILIP, 2021h). The assessment criteria for a Fellowship application are naturally more rigorous than the criteria for Certification or Chartership:

1. IDENTIFY areas for improvement in your personal performance, UNDERTAKE activities to develop skills, APPLY these in practice and REFLECT on the process and outcomes
2. EXAMINE the organisational context of your work, and EVIDENCE SUBSTANTIAL ACHIEVEMENT in professional practice
3. ESTABLISH your commitment to, and ENHANCE your knowledge of, the information profession in order to make A SIGNIFICANT CONTRIBUTION to all or part of the profession.

A supporting guide is made available to applicants (CILIP, 2021i). The achievement of Fellowship allows the use of the postnominals *FCLIP*, and as with Chartership, revalidation of professional status is recommended. The revalidation process is examined in section 8.1.3 of this report.

CILIP also awards honorary fellowships to recognise people, not necessarily library and information professionals, who have made an outstanding contribution to the library and information world, for example having had a significant positive impact on people and society through their work in or support for the information profession; their work successfully raising the profile and status of the information profession in some way; or their work having had a significant and positive impact in advancing the information profession (CILIP, n.d-c).

Professional Registration for knowledge management (KM)

In 2019, CILIP introduced the specialised Professional Registration pathway for knowledge managers, with the opportunities to apply for KM Chartership and KM Fellowship (CILIP, n.d.-d). While the application process is similar to the existing Professional Registration requirements, there is also a KM Conversion pathway (CILIP, n.d.-e) designed to encourage those who already have the status of *MCLIP* or *FCLIP* to attain an equivalent status with the KM professional specialisation. The respective postnominals are *MCLIP KM* and *FCLIP KM*. CILIP has produced guides to support members who wish to follow this journey (CILIP, 2021j; CILIP, 2021k).

CILIP also has a mentoring program to offer support to candidates who are working on their Professional Registration journeys (CILIP, n.d.-f). The mentors, who are experienced professionals trained in mentoring skills, offer support to applicants at the same level of Professional Registration.

Professional recognition of international qualifications

CILIP has reciprocal arrangements for recognising international qualifications (CILIP, n.d.-g):

- Australia: Australian Library and information Association (ALIA)
  - Bachelor, Graduate Diploma and Master's degrees
- USA: American Library Association (ALA)
  - Master's degree
- Ireland: Library Association of Ireland (LAI)
  - Undergraduate, postgraduate and Master's level degrees.

No mention is made of reciprocal arrangements with New Zealand, yet LIANZA lists CILIP as an association with reciprocal arrangements. There is some uncertainty about library and information qualifications awarded by academic institutions in the European Union (EU); until Brexit, EU qualifications were accepted in the UK for employment purposes. Qualifications attained in other countries need to be submitted to CILIP for assessment, with assistance provided by UK ENIC as the designated authority for international qualifications and skills.

Apprenticeships

Over the past few years, CILIP has been working with the Institute for Apprenticeships & Technical Education (IFATE) to introduce an apprenticeship scheme for the library and information sector. Apprenticeships were recognised as new entry-level pathway that offered the opportunity to open up the profession to "a wider pool of talent" (CILIP, 2020e) while maintaining workforce quality. The value of apprenticeships has been highlighted:

> They combine formally acquired knowledge and on-the-job learning. They are developed to strict employer-led standards, have robust assessment, provide a formal qualification and of course allow people to earn and learn.

There are jurisdictional differences between England, Wales, Scotland and Northern Ireland, but the apprenticeship arrangements under development in England were approved in late 2018 (CILIP, n.d.-h) with the Level 3 Library, Information and Archives Services Assistant Apprenticeship standard, referred to as the LIAS Assistant standard (IFATE, 2021). A large number of library and information industry bodies and employers were involved in creating the standard, including CILIP, Archives and Records Association (ARA), The British Library, The National Archives, the Department of Communities and Local Government, several universities, county councils and healthcare libraries.

In England, all employers with a payroll of over £3 million pay an Apprenticeship Levy into a fund for apprenticeships; the only way to draw down on their contributions is to fund an apprenticeship (CILIP, 2020e). The apprenticeship arrangements cover 18-month placements with government funding up to £6,000. Apprenticeship conditions include:

- The apprentice must be over 16 years
- 80% of their time is spent on workplace practice
- 20% of their time is spent in off-the-job training (with an approved training provider).

The Level 3 standard outlines the apprentices' duties, and the areas of knowledge, skills and behaviours (KSBs) required, all based on the PKSB. The standard aligns with two opportunities for professional recognition (IFATE, 2021):

- Chartered Institute of Library and Information Professionals (CILIP) Certified Member (*ACLIP*)
- Archive and Records Association (ARA) Foundation Member (*FMARA*).

CILIP has reported that further apprenticeship standards are under development (CILIP, 2020d):

- Level 4 Information manager
- Level 7 Health and care intelligence specialist
- Level 7 Archives and records management.

CILIP Pathways is the service area that plays the role of end point assessment organisation (EPAO) for the apprenticeship scheme (CILIP, n.d.-i), and in June 2021 it was announced that the first cohort of apprentices completed their apprenticeship (CILIP, 2021l).

6.2.3 American Library Association (ALA)

The ALA emphasises that there are many different career alternatives in library and information services and the association has developed a *Library Careers* web resource to guide prospective library and information workers about their options (ALA, 2021d; ALA, 2021e). One of the starting points is the webpage *Start your career path to education here…* (ALA, 2021f). Despite the variety of careers available, the three main categories presented are very library-focused:

- Librarian
- Librarian in schools
- Library assistants and technicians.

The different educational pathways are outlined for the different professional and paraprofessional groups, although the web architecture is rather complex, with some resources created by the ALA Office for Human Resource Development & Recruitment (HRDR) and some by LibraryCareer.org, and the themes of careers, employment, LIS education and ALA accredited programs all intertwined.

Library assistants and technicians

A resource centre has been developed entitled *Library support staff resource centre*, targeting "library support staff, paraprofessionals, and those interested in library work" (ALA, 2021f). An assortment of general information is provided on education and training, library certificate and degree programs, certification information by state, and other resources, but it is difficult to locate authoritative information. The information available states that the training requirements for library assistants is generally minimal, with positions open to high school students with or without a diploma. They receive most of their training on the job: while generally no formal postsecondary training is expected, familiarity with computers is helpful (ALA, 2021g).

The training requirements for library technicians ranges from a high school diploma to specialised postsecondary training. Educational pathways include certificates, associate degrees (2 years) and Bachelor degrees (4 years) in library studies. The ALA states that "currently, there is no agency that accredits undergraduate or associate's programs in library and information studies" (ALA, 2021h). Gibbons and White (2019), on the other hand, report that 16 Bachelor courses and one in Canada have been awarded ALA accreditation.

Librarians

The ALA website advises that "a Master's degree from an ALA-accredited Library and Information Studies program prepares you for a professional career in librarianship" (ALA, 2021i) and that most employers will require the qualification for professional roles. It is noted that "there is considerable variation among ALA-accredited programs" (ALA, 2021j), so prospective students are encouraged to contact the academic institutions to get the information they need.

The ALA is responsible for accrediting library and information courses (MLIS) in the US and Canada. The figures presented by Gibbons and White (2019) indicated that there were 84 LIS programs in the North America (US and Canada), with 61 ALA-accredited. Of these 61, 42 offered studies in archives and/or recordkeeping, and 28 were iSchools. It should be noted that these figures were based on 2018 data and the number of iSchools has since increased: there were 39 in 2018 (Gibbons & White, 2019), compared with 48 in 2021 (iSchools, n.d.-c).

In Canada, there are currently eight Master's courses that have received ALA accreditation (ALA, 2021k; Gibbons & White, 2019). As a federation of library associations, the CFLA-FCAB website advises that the association works with its member organisations "to identify suitable Canadian professional librarians to serve on ALA accreditation panels reviewing Canadian Library and Information schools" (CFLA-FCAB, n.d.-c).

Librarians in schools

On the ALA website it is explained that there are two pathways to becoming a school librarian or teacher librarian. A professional degree is required, which can either be the MLIS degree accredited by the ALA, or a Master's degree with a specialty in school librarianship, accredited by teacher education agencies (ALA, 2021l). More detailed information available on the website of the American Association of School Librarians (AASL), which is a division of the ALA. A comprehensive discussion of the specialised requirements for teacher librarians is presented in section 3.3.5 of this report.

Library and information qualifications and ALA membership

In terms of the membership structure of the ALA, the 'Regular' membership category "includes librarians as well as others employed in library and information services or related activities in positions that: (a) require a master's degree; (b) require a state level certification; or (c) are managerial" (ALA, 2021m). There is an additional category for 'Non-salaried/in transition' members which includes librarians who earn less than US$30,000 per year, or are not currently employed. A further category is for 'Library support staff', described as "others employed in library and information services" (ALA, 2021m).

Information about the countries which are viewed as having 'formal' accreditation processes for library studies at the Master's level is provided (although not all the details and weblinks are currently correct) (ALA, 2021n). Advice is given that "an accredited degree from an institution in one of these countries is considered acceptable for employment in the United States" (ALA, 2021n). In Canada, the CFLA-FCAB has adopted the former CLA's policy to recognise, on a reciprocal basis, professional qualifications at the master's level from library schools in Australia, New Zealand, and Great Britain" (CFLA-FCAB, n.d.-d).

It has been concluded that, in the US, neither the ALA nor the iSchools movement address the issues of career pathways, or professional pathways, in the ways in which CILIP and LIANZA have already done, and ALIA is now exploring. The emphasis is placed solely on the attainment of a Master of Library and Information Science (MLIS) degree, accredited by the American Library Association (ALA). There are, however, examples of regulatory certification programs, such as Public Library Certification in New York State. No current employment data about the graduates from ALA-accredited MLIS programs and the iSchool courses was identified in the research activities.

6.2.4 Public library certification schemes

The details of the New York State Public Library Certification scheme are outlined on the New York State Library (NYSL) website, where it states that "any person appointed to or employed in a permanent (part-time or full-time) professional librarian position in a public, association or Indian library must hold an ACTIVE public librarian certificate issued by the New York State Education Department" (NYSL, 2021).

A new employee in an entry-level professional position who has not yet completed their formal studies must apply for a Conditional Certificate, which valid for two years, while the full Professional Certificate is awarded to MLIS graduates. Certified librarians are required to complete at least 60 hours of CPD activity within a five-year period (although this requirement is waived for anyone granted certification prior to 1 January 2010) (Commissioner of Education, n.d). School library media specialists in New York State are required to undertake 175 hours of PD over a five-year period, in line with the State Education Department regulations.

Similar public librarian certification programs are also in place in other states, e.g. North Carolina, Michigan and Indiana. In North Carolina, it is stipulated that an applicant's ALA-accredited MLIS degree must have included coursework in cataloguing, reference work, collection development and library management. The terminology and concepts relating to each of these core competencies are presented on the State Library of North Carolina website (SLNC, n.d.).

6.3   Qualification pathways in other professions

Here in Australia, the Professional Standards Council (PSC) is the government agency which has oversight over the schemes of professional standards which oblige associations to monitor, enforce and improve the professional standards of their members, in order to ensure that consumers are protected (PSC, n.d.-b). The PSC website has a research library covering a range of professional issues, including qualifications to practice, accreditation, and alternative pathways. One paper of interest looks at alternative ways of gaining entry into the professions, beyond the traditional route of an undergraduate plus appropriate professional training (Chellew et al., 2012). The authors argue that "this traditional paradigm is beginning to be broken down and challenged with new, more flexible alternative pathways into the professions" (Chellew et al., 2012, p.1). In the paper, they explore several different pathways, including:

- Graduate degree pathways
- Profession-based, rather than academic qualification, pathways
- Apprenticeship pathways
- Transitional requirement pathways
- Limited rights to practice pathways
- Foreign qualification pathways.

In this section, the discussion moves away from the field of library and information science to explore the range of pathways for entry into four other professions: accounting, data management, law and architecture. While most of the selection of professions require licences, certificates or registration to practice in Australia, they all offer flexible career-focused options for entry into the field.

Accounting

In the field of Accounting, the Institute of Chartered Accountants Australia & New Zealand (CA ANZ) offers the qualification of Chartered Accountant (CA), while CPA Australia offers pathways to becoming a Certified Practicing Accountant (CPA).

Chartered Accountant (CA)

Full membership of CA ANZ requires completion of the Chartered Accountant (CA) program. To embark on the journey to becoming a CA, a person must first apply for provisional membership of CA ANZ. The options for entry are based on academic eligibility, demonstration of competence, and alternate pathways to meet competence requirements (CA ANZ, 2021a).

- Academic eligibility
    - Hold a CA ANZ accredited degree or a qualification assessed as equivalent to a Bachelor degree (AQF Level 7 or higher) with coverage of the required competency areas
    - Hold a degree assessed as equivalent to a Bachelor degree (AQF Level 7 or higher) with coverage of the required competency areas, and where the degree was not delivered in English, evidence of English language proficiency
- Demonstrate required competence
    - Provide evidence of knowledge of a listing of areas of accounting and business

- Alternate pathways to meeting competence requirements, for example:
  o Tertiary courses accredited by CA ANZ may meet all or some of the required competencies
  o Where tertiary qualifications are not accredited by CA ANZ, assessment of satisfactory completion of the required competencies
  o Where the competence requirements are partially met, applicants may complete further studies via an accredited course or via the CA ANZ's CA Foundation Pathway.

The CA Foundations program is offered in partnership with Deakin University to enable candidates to bridge their existing studies to be eligible for entry into the CA program (CA ANZ, 2021b). The program accepts graduates of final year students in an Australian, New Zealand or overseas equivalent degree.

Once candidates have been accepted as provisional members of CA ANZ, they may enrol in their first CA Program subject and register to undertake Mentored Practical Experience (MPE). To achieve full membership of CA ANZ, candidates must complete both:

- CA ANZ's Graduate Diploma of Chartered Accounting (GradDipCA) course, and
- Three years Mentored Practical Experience (MPE) with a CA ANZ approved employer.

Full details of these requirements are available on the CA ANZ website provides a detailed overview of the entry requirements to the CA program, while details of the mentoring program are presented in the *MPE Guidelines* document (CA ANZ, n.d.).

The CA Program consists of nine subjects, seven core and two electives (CA ANZ, 2021c). The core subjects are listed as:

- Ethics and Business
- Risk and Technology
- Financial Accounting and Reporting
- Tax
- Business Performance
- Audit and Risk
- Integrated Chartered Accounting Practice.

The CA Program can also be completed through the successful completion of a Master's degree in Professional Accounting, currently offered by Macquarie University, University of Western Australia, and Victoria University of Wellington, New Zealand. The CA Program is embedded in the final year of the Master's course, with the modules delivered and assessed by CA ANZ. There are also arrangements for the recognition of prior learning (RPL) which allows for credit for prior studies, work experience or other forms of informal learning.

CA ANZ also recognises an Accounting Technician (AT) pathway (CA ANZ, 2021c):

- Academic pathway
  o Tertiary study towards an accredited degree with passed subjects in the required AT competencies
  o New Zealand Diploma of Business (NZQF Level 5 or Level 6) Accounting Strand
  o New Zealand National Diploma of Business (NZQF Level 6)
  o Overseas equivalency, as assessed by CA ANZ.

- Experience pathway
    - At least five years accounting work experience
    - Provisional membership of CA ANZ
    - Assessment of Competence to confirm knowledge and skills.

Members are required to undertake and record CPD activities (CA ANZ, 2021d):

- Chartered Accountants (CA):
    - 120 hours over a three-year period
    - 90 hours (of the 120 hours) must be verifiable CPD
    - 20 hours minimum per year
- Accounting Technician (AT):
    - 60 hours over the triennium
    - 45 hours must be verifiable CPD
    - 10 hours minimum per year.

Since 1 July 2021, on-the-job training has been recognised as verifiable CPD, where new or enhanced knowledge or experience is attained. This form of training may make up half of the verifiable CPD requirements.

Certified Practicing Accountant (CPA)

The title CPA awarded by CPA Australia to someone who is "a finance, accounting and business professional with a specific qualification" (CPA Australia, 2021a). The pathway to becoming a CPA involves:

- Completing a degree or postgraduate award recognised by CPA Australia
- Completing the CPA program, including three years of professional experience in finance, accounting or business
- Undertaking CPD activities every year
- Complying with a strict code of conduct set by CPA Australia.

To participate in the CPA Program, candidates must first be members of CPA Australia. There is value in already having a relevant degree, e.g. in accounting, as the basis for enrolment in the CPA program, but there are also Foundation exams which provide an alternative entry route. The foundation subjects include (CPA Australia, 2021b):

- Economics and Markets
- Foundations of Accounting
- Fundamentals of Business Law
- Business Finance
- Financial Accounting and Reporting
- Management Accounting.

There are two key components to the CPA Program, study and experience (CPA Australia, 2021b):

- Subjects
    - 4 compulsory subjects
        - Ethics and governance
        - Strategic management accounting
        - Financial reporting
        - Global strategy and leadership
    - 2 elective subjects

- Experience requirement: three years
  - Demonstration of ten experience-based skills across four domains:
    - Technical
    - Personal effectiveness
    - Business
    - Leadership

It recommended that participants study Ethics and Governance as their first subject and a listing of experience and skills is provided (CPA Australia, 2021c). While there is no formal mentoring program, networking with a mentor is encouraged. There are mutual recognition pathway arrangements with other professional bodies across the world. Once qualified as a CPA, members are required to complete 120 hours of continuing professional development activity over a three-year period, with a minimum of 20 hours each year (CPA Australia, 2021d).

Data Management

There is no legal registration requirement to be a practicing Data Management Professional in Australia. DAMA Australia, the professional body for Australians in the data management profession, offer certification through DAMA International (DAMA-I), who describe themselves as "the leading organization for data professionals" who for over 30 years have developed "a comprehensive body of data management standards and practices" (DAMA, 2021a). The *Data management body of knowledge* (DMBOK2) (DAMA-I, 2013) was outlined in section 4.3 of this report.

DAMA-I offers a credentialling program, Certified Data Management Professionals (CDMP), which offers four levels of professional certification, each with different requirements (DAMA, 2021b):

- Associate
  - 6 months – 5 years industry experience (guideline)
  - 60% pass in the Data Management Fundamentals exam
- Practitioner
  - 2-10 years industry experience (guideline)
  - 70% pass in the Data Management Fundamentals exam and 70% pass in 2 specialist exams
- Master
  - Minimum 10 years industry experience (required)
  - 80% pass in the Data Management Fundamentals exam and 80% pass in 2 specialist exams
- Fellow
  - By nomination
  - 25 years industry experience
  - CDMP Master
  - Globally recognised & respected thought leadership, significant contribution to Data Management profession, contribution to the CDMP program and to the *Data management body of knowledge*.

All CDMP examinations test the candidate's knowledge of the DAMA *Data management body of knowledge* (version 2) (DMBoK2) (DAMA-I, 2013). The Data Management Fundamentals exam covers 14 topics: 11 Knowledge areas, plus Data Management Process, Ethics, and Big Data:

- Data Management Process
- Big Data
- Data Architecture
- Document and Content Management
- Data Ethics
- Data Governance
- Data Integration and Interoperability
- Master and Reference Data Management
- Data Modelling and Design
- Data Quality
- Data Security
- Data Storage and Operations
- Data Warehousing and Business Intelligence
- Metadata Management

If candidates gain the required mark on the exam they receive a digital badge through Badgr and a certificate. Certification is valid for three years and continuing professional development is encouraged through that period "certification includes an expectation… that the certified person actively works to increase their personal capabilities, skills and knowledge." (DAMA, 2021b).

Law

Admission to the legal profession has three components (The College of Law, 2021a):

- Completion of a law degree (or equivalent course)
- Completion of a Practical Legal Training (PLT) program, which results in the award of Graduate Diploma of Legal Practice (within five years of graduation)
- Being a fit and proper person.

Academic pathways may include an undergraduate degree followed by the Juris Doctor degree, prior to enrolment in a PLT program.

The College of Law explains that academic studies provide the theoretical understanding of the law, but practical skills and knowledge is also required for legal practice, attained through a PLT program (The College of Law, 2021b). The duration of the PLT is 15 weeks full-time, 30 weeks part-time, and it involves coursework (The College of Law, 2021c), work experience (The College of Law, 2021d) and CPD (The College of Law, 2021e):

- Coursework
  - Five compulsory subjects
    - Civil litigation practice
    - Commerical and corporate practice
    - Property law practice
    - Lawyer's skills
    - Ethics and professional responsibility
  - Two elective subjects
- Work experience
  - 75 days, or
  - 15 days (25 days in WA) combined with a Clinical Experience module

- Continuing professional education
    - 10 online interactive modules on issues relevant to the workplace, e.g.
        - Legal tech and innovation: the past year in review
        - Developing a commercial mindset
        - Understanding financial information
        - Networking and personal brand
        - Communicating effectively.

Having a mentor as part of the candidate's career development process is also recommended.

While The College of Law details the pathways into the legal profession, it should be noted that a number of law schools at Australian universities also offer the PLT program as a Graduate Diploma of Legal Practice.

Upon completion of the PLT, it is necessary to apply for admission to the State or Territory Supreme Court (The College of Law, 2021f). The admitting authority is the Legal Practitioners Admission Board, Legal Profession Admission Board, or Legal Practice Board in the given jurisdiction. Attendance at an admission ceremony is required, where the applicant takes an oath or affirmation of office and signs the Supreme Court Roll. When they have been formally admitted to the legal profession, it is necessary to obtain a practicing certificate, issued by the relevant law society.

Once the practicing certificate has been awarded, the legal practitioner is required to complete a required number of hours of CPD. In Queensland, for example, the Queensland Law Society (QLS) CPD scheme involves solicitors accumulating CPD units: the requirement is currently ten units per annum (QLS, 2021a). It is stated that at least one CPD unit must be attained in each of three mandatory areas: practical legal ethics, practice management and business skills, and professional skills (QLS, 2017). Different unit values are awarded for different CPD activities, for example one hour of course participation or two hours of committee work equate to one CPD unit. Completion of a specialist accreditation program is calculated as 10 CPD points.

The Specialist Accreditation Scheme is part of a national framework that establishes a benchmark for professional expertise in a specific area of law, e.g. business law, family law or mediation (QLS, 2021b). Accredited specialists may use the postnominal *Acc.Spec.* and are permitted to use the Accredited Specialist logo on their business cards, stationery and marketing materials (QLS, n.d.).

Some pathways into legal practice are offered in the vocational education sector, through training packages leading to the Diploma of Legal Studies, the Advanced Diploma of Legal Practice or the Advanced Diploma in Paralegal Studies (IDP, 2021; Victoria University, 2021). The courses are designed for students to gain essential skills as a legal paraprofessional and may be used as the foundation for more advanced legal studies.

Architecture

Architecture is a registered profession in Australia. The successful completion of a five-year academic qualification accredited by the Architects Accreditation Council of Australia (AACA) is the most common pathway into the profession (AACA, n.d.-a). The AACA manages the accreditation process on behalf of the State and Territory architect registration boards. The AACA advises that "most candidates seeking registration as an architect in Australia are required to complete the

Architectural Practice Examination unless they are eligible to achieve registration via another pathway" (AACA, n.d.-b). The AACA *National standard of competency* represents the framework for "the primary activities and responsibilities that are fundamental to the general practice of architecture in Australia" (AACA, 2020).

There are nine key elements of practice, supported by 70 performance criteria:

- Design
  - Project briefing
  - Pre-design
  - Conceptual design
  - Schematic design documentation
- Documentation
  - Detailed design
  - Documentation
- Project delivery
  - Procurement
  - Construction stage
- Practice management
  - Practice management.

In addition, there are five knowledge domains that represent the core areas of knowledge and understanding that underpin architectural practice:

- Regulatory domain
  - Knowledge of the regulations, standards and codes, relevant to all aspects of architectural practice, project design and delivery
- Social & ethical domain
  - Knowledge of the social, ethical and cultural values relevant to architectural practice and impacts on project users and broader communities
- Sustainable environment domain
  - Understanding the responsibility of architects to minimise the impact on natural resources and design for longevity
- Disciplinary domain
  - Knowledge of histories and theories relevant to architecture, practice, building and technologies
- Communication domain
  - Knowledge of appropriate verbal, written and visual means to communicate relevant aspects of architecture.

Candidates apply to sit a three-part Architectural Practice Examination through the architect registration board in the State or Territory where they plan to practice (AACA, n.d.-c; AACA, n.d.-d):

- Part 1: Submission of logbook and Statement of practical experience
  - After graduation, candidates must complete a minimum of 12 months of supervised experience, recorded in the logbook
  - The statement of practical experience should provide evidence of satisfaction of the practical experience requirements
- Part 2: National examination paper
  - This is a 90-minute online examination with 9 scenarios, each with five multiple choice questions

- Part 3: Examination by interview
  - Candidates are examined by two assessors on their range of work and experience, and on topical professional issues.

Upon a successful outcome, a candidate may apply for registration with the registration board.

A second pathway is available through for candidates with overseas qualifications (AACA, n.d.-e):

- Stage 1: Verification of equivalency of international academic qualifications
- Stage 2: Assessment of project portfolio based on the *National standard of competency*, plus participation in a panel interview
- Stage 3: Architectural Practice Exam.

The outcome of this assessment may be used for either registration as an architect in Australia, or to support an immigration application under the Skilled Migration Program for the occupation 'Architect'.

The third pathway is the National Program of Assessment (NPrA) which is available to candidates who have substantial skills and experience in the architectural profession, but do not have a recognised qualification (AACA, n.d.-f). The process involves:

- Stage 1: Eligibility
  - Assessment of academic, English language, work experience and residency requirements
- Stage 2: Response to the design brief
  - Development of a design for a complex building in response to a hypothetical design brief (report and drawings)
- Stage 3: Architectural Practice Exam.

A fourth pathway is available to provide experienced practitioners with a fast-track alternative route to registration (AACA, n.d.-g):

- Stage 1: Portfolio of complex projects
  - Submission of a portfolio to provide evidence of their appropriate experience and practice of architecture at an executive level (principal decision maker)
- Stage 2: Panel-based competency assessment interview.

Applicants require a minimum five-year professional qualification, seven years relevant professional postgraduate experience, and one year relevant professional experience operating at an executive level in Australia. There is no requirement for successful applicants to sit the Architectural Practice Exam. There is also a similar pathway for overseas applicants.

Mutual recognition arrangements are in place between the AACA and the professional bodies in Canada, Japan, Singapore and the US, with an agreement with the UK due to be concluded in early 2022.

Registered architects are required by the Board of Registration, e.g. Board of Architects of Queensland (BOAQ) to participate in a minimum of 20 hours of CPS activity per year, with at least ten hours in formal learning activities. Compliance is monitored through a random audit of practitioners (BOAQ, 2020).

In these examples of the pathways options into the accounting, legal and architectural professions, it is evident that there are different ways to manage the requirement for legal regulation and professional registration. Engineers do not have to have a licence to practice, but the professional body, Engineers Australia, awards professional accreditation and professional status. The completion of professional engagement programs with industry prior to graduation are mandatory, and the registration pathway includes classes of engineers such as 'Professional' and 'Chartered'. The professional status requires engineers "to satisfy defined competency standards, agree to maintain those competencies by CPD and commit to ethical standards contained in the relevant codes of ethics" (Breakey et al., n.d.).

Increasingly, less 'standardised' pathways are being introduced which tend to appeal to more mature students who are often changing careers. This cohort brings "a wide range of prior education, work and life experiences to the professions, and offer fresh outlooks" (Chellew et al., 2012, p.6). In such situations, professional associations are interested in considering a more modular approach to learning where there is the potential for growth and renewal in the professions.

The spatial information industry, which embraces Global Positioning Systems (GPS), earth sensing satellites, and the application of ICTs and new mobile technologies in surveying, mapping, and aerial photography, has long sought to address an anticipated skills shortage through "an integrated strategy such as retaining older and more experienced people in the industry, reskilling and upskilling those already in and committed to the industry and managing the 'leakage' of younger professionals to other related industries" (Performance Growth, 2008, p.1). In the future-focused career pathways mapping project, it was recommended that there be an increase in "the availability of short courses, continuing professional development programs and bridging courses that are geared toward facilitating career pathways between specialisms within the industry and providing 'top up' training for skilled and experienced professionals from other industries and disciplines" (Performance Growth, 2008, p.32). Since that time, the interest in and availability of shorter form credentials have indeed grown. This topic will be explored in the next chapter which investigates future views of professional learning.

7.   Future views of professional learning

In their final report of the *Review of the Australian Qualifications Framework*, the Expert Panel discussed the topic of 'shorter form credentials' (Noonan et al., 2019). In Australia, the Australian Qualifications Framework (AQF) represents "the foundation of the Australian education and training system" (Noonan et al., 2019, p.55). With 97% of higher education enrolments are reported to be aligned with AQF qualifications (2017 data), along around half of the enrolments in the vocational sector, AQF qualifications are viewed as very important for industry and the professions. The range of shorter form credentials considered for inclusion in the AQF include (DESE, 2018, p.1):

- Skill sets
- Short courses offered by both vocational education and training (VET) and higher education institutions
- Enabling and foundation courses
- Professional and vendor qualifications
- Massive open online courses (MOOCs)
- Micro-credentials.

In recent years, interest in shorter form credentials, including aggregations of skill sets and micro-credentials, has grown. Brown, Nic Giolla Mhichil, Beirne and Mac Lochlainn (2021) conducted a Google Trend analysis of the Google search results for the term 'micro-credentials' and its variants, covering the period from 2013, when the word first appeared as a search term, to May 2021. They found that "the term is most searched in Australia, but also appears frequently among search queries in Malaysia, Canada, the United States and the United Kingdom in that order" (Brown et al, 2021, p.229-230). The search terms were often linked to the platforms that provide specific types of micro-credential, e.g. 'micromaster' and EdX; or specific courses, e.g. 'android basics nanodegree program'; or 'digital badges' and IBM.

At the beginning of her detailed report, *Making micro-credentials work for learners, employers and providers,* Oliver (2019) pointed out that the concept of micro-credentials was not a new one: "for decades, extension courses have enabled further education, community engagement and lifelong learning" (p.i), and massive open online courses (MOOCs) appeared on the education stage a decade ago. Selvaratnam and Sankey (2021) also noted "the long history of short courses used for professional development by many professional bodies" (p.1). Today, as the world of work rapidly evolves, lifelong learning has become an imperative, with evidence of an increased demand for upskilling and re-skilling through diverse learning pathways and activities (PWC & ATN, 2018).

While it was acknowledged that shorter form credentials generally sit outside of AQF's remit, the Expert Panel conducting the review work recommended that "the AQF should be revised to ensure that it can more effectively fulfil its current role in defining qualification types, reflecting emerging skills needs, facilitate credit recognition – including of shorter form credentials such as microcredentials – and support learner pathways within and between the education and training sectors" (Noonan et al., 2019, p.12). It was also proposed that the AQF policy documents should include guidelines to delineate the characteristics of shorter form credentials in order to help with their recognition for academic credit.

In their recent research into micro-credentials across the world, Brown et al. (2021) described the current micro-credential landscape as "messy and poorly defined, with many competing viewpoints

and disconnected initiatives" (p.228). Significantly, there was no commonly accepted definition of 'micro-credentials' (Noonan et al., 2019; Micro-HE Consortium, 2019; Oliver, 2019; Shapiro, 2020), which made the field "confusing and bewildering to navigate" (Rossiter & Tynan, 2019, p.2). Here in Australia, the Expert Panel for the AQF review has encouraged the adoption of the definition presented by Oliver (2019), derived from the International Standard Classification of Education (ISCED) (Oliver, 2019, p.19):

> A micro-credential is a certification of assessed learning that is additional, alternate, complementary to or a component part of a formal qualification.

Oliver (2019) unpacked this definition: (p.19):

- The definition focuses on *certification* of learning through assessment. This is intended to clearly separate microcredentials from unassessed experiences which are also within non-formal learning (as *unassessed certificates of participation*)
- It is broadened to include 'component parts' of formal qualifications (single units within a formal qualification are sometimes called micro-credentials)
- It is sufficiently broad to encompass the many forms and brand names that have already appeared such as MOOCs, nano degrees and certificates, MicroMasters, Specializations, bootcamps, intensives, short courses – regardless of their mode (onsite, online or blended) or duration.

For everyday use, however, Oliver (2019) proposed a simpler working definition: "a micro-credential is a certification of assessed learning that is less than a formal qualification" (p.19). The European Commission Consultation Group placed emphasis on the micro-credential being a "*documented statement* awarded by a *trusted body* to signify that a learner upon *assessment* has achieved *learning outcomes* of a *small volume of learning* against given *standards* and in compliance with agreed-upon *quality assurance* standards" (Brown et al., 2021, p.233) [emphasis added]. This definition emphasises the importance of learning quality: even 'small volumes of learning' require 'appropriate assessment of learning outcomes, measured against given standards'.

Oliver (2019) argued that a shared understanding of the three main types of educational experience was also critical (p.18):

- *Formal*
  Education that is institutionalised, intentional and planned through public organisations and recognised private bodies, and – in their totality – constitute the formal education system of a country
- *Non-formal*
  Education that is institutionalised, intentional and planned by an education provider.
  The defining characteristic of non-formal education is that it is an addition, alternative and/or complement to formal education within the process of lifelong learning of individuals.
- *Informal*
  Forms of learning that are intentional or deliberate but are not institutionalised.

Other educators have depicted the learning as the three areas of formal learning, collaborative learning and informal learning or as the 70:20:10 model where 70% of learning time should be spent on experiential learning in the workplace, 20% on social or collaborative learning, and 10% on formal learning. Other ratios have been suggested, such as 50:30:20, or 40:30:30 (Deakin University, 2018).

According to Oliver (2019), the concept of micro-credentials is associated with non-formal education. The future view of professional learning is likely to be founded on an understanding of the "interoperability between formal and non-formal learning so that new and prior knowledge and skills can be certified – rapidly, repeatedly, accessibly" (Oliver, 2019, p.iii). The qualifications attained through formal learning, e.g. Bachelor degrees, Master's degrees, are often described as 'macro-credentials' (Brown et al., 2021, p.229); for micro-credentials to be a successful element in the education landscape, there should ideally be seamless interoperability between macro-credentials and micro-credentials.

The role of a national or regional qualifications framework is therefore significant. As noted above, the review of the ACF recommended that, here in Australia, shorter form credentials should be recognised within in the revised qualifications framework. In the AQF, the notion of 'levels' is used as a guide to the anticipated autonomy of learning and as "an indication of the relative complexity and/or depth of achievement" (Noonan et al., 2019, p.21), with AQF Level 1 representing the lowest level of complexity and AQF Level 10 the highest level. The current schema places vocational Certificates I, II, III and 4 at AQF Levels 1, 2, 3 and 4; the Diploma at Level 5 and both the Advanced Diploma and Associate Degree at Level 6; the Bachelor degree is aligned with Level 7, the Bachelor Honours degree, Graduate Certificate and Graduate Diploma at Level 8, Master's at Level 9, and the Doctoral degree at Level 10. Brown et al. (2021) reported that in Ireland, the National Framework of Qualifications (NQF) already accommodates 'special purpose awards', thus enabling credit-bearing micro-credentials to be recognised as building blocks for a macro-credential.

There is extensive debate about micro-credentials in the academic, professional and government policy sectors across the world (for example: Beirne, Nic Giolla Mhichil & Brown, 2020; Boud & Jorre de St Jorre, 2021; Bowles & Lanyon, 2016; Brown et al., 2021; Chakroun & Keevy, 2018; Colleges & Institutes Canada, 2021; European Commission (EU), 2020d; European MOOC Consortium, n.d.; Ifentaler et al., 2016; International Council of Distance Education (ICDE), 2019; Kato et al., 2020; Lantero et al., 2021; MicroHE Consortium, 2019; Oliver, 2019; Oliver, 2021a; Pichette et al., 2021; Rossiter & Tynan, 2019; Selvaratnam & Sankey, 2020; Selvaratnam & Sankey, 2021; Shapiro, 2020; UNESCO, 2018). Nevertheless, it goes beyond the scope of this report to review and synthesise this vast body of research and discussion. In this chapter, micro-credentials are examined from two angles: the perspective of education institutions and the perspective of industry and the professions. Education and training providers and employers represent two of the key stakeholder groups in the debate about required knowledge and skills in the 21st century workplace, but their interests in micro-credentials differ (Selvaratnam and Sankey, 2021). The need for alignment between learning and occupational outcomes is a crucial aspect of upskilling and re-skilling the future workforce.

7.1   Micro-credentials: the perspective of education institutions

Arguments about the growing trend for education institutions to offer micro-credentials highlight the tensions that exist between the belief that they seek to erode the public good of higher education (Ralston, 2021) and the belief that they are an essential response to the realities of the contemporary world where digital technologies, especially artificial intelligence, are disrupting the nature of work as we know it. Ralston (2021) postulates that "the craze for microcredentialing reflects (1) administrative urgency to unbundle higher education curricula and degree programs for greater efficiency and profitability and (2) a renascent movement among industry and higher education

leaders to reorient the university curriculum towards vocational training" (p.83). The drivers for this "craze" include the need to address the inevitable skills gaps which will result from "automation-induced labor market shocks" (Ralston, 2021, p.101).

Oliver (2019) has noted that, since the features of future work will indeed be very different from those of today, the higher education systems as we know them will no longer "prepare graduates or validate their skills adequately for work" (p.1). Consequently, when students regard traditional academic pathways as being too linear, too rigid and far too costly, the university degree "is seen as less valuable than specific and relevant skills or experience" (PWC, 2017, p.13). Already, students are seeking far more nimble and flexible learning models that are more closely aligned with employer needs (Boud & Jorre de St Jorre, 2021).

Proposals to deconstruct a university degree program and re-package the content as a collection of bundles of skills have been viewed as problematic. Some commentators argue that there is still merit in 'the education of the whole person', especially in terms of the development of their professional identity, as opposed to just attaining a string of employability skills. On the other hand, Coursera is successfully disrupting the status quo by introducing a "career-focused pathway" which shifts the focus from "learning for its own sake" to "learning for earning" (Oliver, 2020, p.5).

If the educational goal is to use micro-credentials as the building blocks for a macro-credential, fundamental educational issues should not be ignored. Boud and Jorre de St Jorre (2021) declared that, since they believed there were already deficiencies in the assessment of learning outcomes in macro-credentials, i.e. degree programs, it was critical "to refrain from creating micro-credentials simply through unbundling existing credentials, until these are reformed to be transparent in meeting the minimum standards of achievement required, for each designated [learning] outcome" (p.19). The pedagogical aspects of micro-credentialing are considered more critical than the technological aspects (MicroHE Consortium, 2019).

In February 2021, the *Journal of Teaching and Learning for Graduate Employability* released a special issue on 'Micro-credentials and qualifications for future work and learning in a disrupted world'. The issue includes three academic papers (Perkins & Pryor, 2021; Seet & Jones, 2021; Selvaratnam & Sankey, 2021) and four provocations (Boud & Jorre de St Jorre, 2021; Healy, 2021; Oliver, 2021b; Oxley & van Rooyen, 2021). The articles discuss micro-credentials within the contexts of vocational education and training, higher education and employment.

Vocational education

As part of the AQF review, the issues relating to shorter form credentials in the VET sector were examined (DESE, 2018). *Skill sets* are described as "distinct groupings of one or more units of competency that define the required skills and knowledge of a job, task or function in the workplace" (DESE, 2018, p.2). Skill sets can be associated with any VET course but, as they may span different levels of the AQF, they cannot be assigned to any specific AQF level. As an example, there is a Customer Service Skill Set which is part of the Business Services training package (BSB) which encompasses four units of competency: Deliver and promote a service to customers; Advise on products and services; Assist with customer difficulties; and Process customer complaints. Given their popularity in the business and industry sectors, particularly in staff professional development, it was found that skill sets had "a possible pathway role in building on existing qualifications" (DESE, 2018. P.2).

The term *short course* is given to groups of units of competencies that offer students the opportunity to get a basic understanding of an area without committing to a full TAFE or university course. A vast range of short courses is available, often offered in collaboration with industry partners, for example, New supervisor (Australian Institute of Management (AIM)), Project management fundamentals (AIM), People leadership (AIM), Customer experience strategy and design (RMIT Online) or Event management (The Career Academy and the Institute of Hospitality).

Where a student has successfully completed one or more units of competency, but not a full qualification, the training may be recognised as an *incomplete qualification*. Incomplete qualifications appear to be viewed more positively in the VET sector than in the higher education sector; for example there may be a specific industry need for a single unit of competency, e.g. the responsible service of alcohol in the hospitality sector, which is often completed on its own, as opposed to being a component of a range of qualifications (Certificate I through to Advanced Diploma in the Tourism, Travel and Hospitality training package). This is then recorded as an incomplete qualification. It has been suggested that "better recognition of incomplete qualifications in the AQF may improve recognition of this form or prior learning as a pathway to further learning" (DESE, 2018, p.3).

Apprenticeships also represent a training option in the VET sector. Library apprenticeships and traineeships were discussed in the section on vocational education and training pathways in Chapter 6 of this report. Although the idea of library apprenticeships is not without significant challenges, as the interest in employability skills grows it is likely that the apprenticeship model of learning, i.e. combining college studies and workplace learning, will become more prevalent (MicroHE Consortium, 2019).

A foundation skills training package is available to support entry into the workplace that includes two Certificate I and one Certificate II courses offering basic training in literacy, numeracy and computer skills. There are also two Certificate IV packages to prepare prospective students with the preparation for and access to university. Beyond these programs, there are further enabling courses and foundation courses offered by universities to facilitate access to higher education. Typically, they are referred to as foundation studies, special entry programs and alternative entry programs. Completed studies may be included in the credit requirements for a higher education course, but this will depend on the institution's own articulation arrangements for the course.

TAFE Queensland has introduced a number of micro-credentials, some of which are industry-recognised and some are self-paced. Compared to the skill sets which are based on units of competency, these micro-credentials are free short courses focusing on very specific skills. They are offered online, non-assessed and non-accredited; upon completion the student receives a statement of attainment and "a digital badge to share on your social media profiles" (TAFE Queensland, 2021). The topics of the self-paced micro-credentials include Digital literacy essentials, Digital data essentials and Data analysis essentials.

Higher education

In the higher education arena, Kift (2021) has acknowledged that there has been an accelerated shift away from macro-credentials such as workforce entry-level degrees and vocational certificates to shorter form credentials. There has been "a dazzling array of free and low cost short courses offered by VET/FE and HE providers, frequently with government support" (Kift, 2021 p.iii). Many of these

are directly associated with the upskilling and re-skilling of displaced workers as they plan their return to employment after the disruptions of the labour market caused by the pandemic.

The AQF review recognised the emerging interest in 'non-standard' learning options such as informal learning, in-service learning and micro-credentials, but acknowledged that currently there were "no mechanisms within the Australian system to assign [AQF] levels… in a way that ensures national or international consistency" (Noonan et al., 2019, p.144). While micro-credentials might meet specific industry or community needs, it was argued that it would be challenging to incorporate them within the AQF itself. Micro-credentials were generally not accredited by any regulatory body, they were likely to span a number of different AQF levels, and they seldom demonstrated any reliable form of assessment of learning outcomes (DESE, 2018). It was suggested, however, that it may be feasible for a new agency to be established, or an existing one given authority, to assign individual micro-credentials to an AQF level. This model has already been introduced in New Zealand.

In 2018, the New Zealand Qualifications Authority (NZQA) introduced a micro-credential system as part of the country's regulated education and training system (NZQA, n.d.-a):

> A micro-credential certifies achievement of a coherent set of skills and knowledge; and is specified by a statement of purpose, learning outcomes, and strong evidence of need by industry, employers, iwi and/or the community.
>
> They are smaller than a qualification and focus on skill development opportunities not currently catered for in the regulated tertiary education system.
>
> At a minimum, micro-credentials will be subject to the same requirements as training schemes or assessment standards and will also be required to:
>
> - Be 5–40 credits in size
> - Have strong evidence of need from employers, industry and/or community
> - Not duplicate current quality assured learning approved by NZQA
> - Be reviewed annually to confirm they continue to meet their intended purpose.

The approved micro-credentials are published on a micro-credential register (NZQA, n.d.-b). Some of the registered micro-credentials include Digital skills for the workplace, Providing customer service to culturally diverse customers, Workplace digital literacy: interface between smart devices and digital platforms, and Whakawhanaungatanga - Rapport 101: communication for practitioners and educators. The approach adopted in New Zealand allows for micro-credentials to be 'stacked' towards the attainment of a qualification: this "enables a more modular and flexible approach to learning and achievement where a learner may enrol into a qualification and/or the micro-credential depending on their goal" (NZQA, n.d.-a). In this way, a learner may choose to enrol in a specific micro-credential to gain specific skills that provide the opportunity to gain employment, and then subsequently follow the more comprehensive studies towards the qualification. The NZQA does not anticipate, however, that a whole academic program could be made up of micro-credentials.

Massive open online courses (MOOCs) represent another type of shorter form credential that currently lie outside of the existing Australian credentialling systems. The European MOOC Consortium (EMC) – a partnership of the major European MOOC platforms – has addressed the need for a standardised credential by developing the Common Microcredential Framework (CMF) (EMC, n.d). The CMF draws on the European Qualifications Framework (EQF) to determine the appropriate levels of the different MOOC programs that award academic credit. The goals are to introduce

consistency in the MOOC environment by laying the foundations for new qualifications that meet the needs of learners and employers who are looking for smaller units of study to develop relevant skills. The CMF will enable micro-credentials to be recognised as part of larger formal qualifications and may be stackable across different higher education systems (EMC, 2020). The targeted levels of the EQF are Level 6 (Bachelor), Level 7 (Master's) and Level 8 (Doctorate). The CMF incorporates the concept of a transcript that sets out the learning outcomes from the course, the hours of study required, the EQF level and the number of credit points earned.

In July 2020, the EU launched the *Skills Agenda for Europe* which includes the creation of standards for micro-credentials as one of the key initiatives designed to support people in their lifelong learning pathways (EU, n.d.). Further consultation has been undertaken in Europe with a high-level Consultation Group charged with the task of analysing the state of play with the spectrum of issues such as qualification frameworks, academic credit arrangements, quality assurance and the portability of micro-credentials. The Consultation Group's report was released at the end of 2020, leading into a wider consultation process with stakeholders drawn from all relevant areas of policy and practice representing all EU member states (EU, 2020d; EU, 2020e). The report from these consultations is due at the end of 2021.

It is important to understand the multi-faceted opportunities and challenges that inevitably emerge with the diverse stakeholder groups: educational institutions, training providers, employers, the professions and governments. It is essential that these stakeholders come together to establish "a common, comprehensive framework and language for building and demonstrating the knowledge and skill sets we'll all need to thrive in the future of work" (Salin, 2019). The value propositions associated with micro-credentials for the various stakeholder groups are wide-ranging, as outlined in Table 40 (Brown et al., 2021; MicroHE Consortium, 2019; Salin, 2019).

Table 40. Micro-credentials: the value propositions associated with the diverse stakeholder groups

Stakeholder	What's at stake?
Learners	Incentives to pursue new skills, new possibilities for re-skilling and upskilling, evidence of achievement, ability to demonstrate granular competencies, personal success, future employment, career opportunities, providing others with insights into professional development and strategies to build knowledge and skills, lower costs of study, more flexible learning, increased personalisation, more up-to-date content
Educational institutions	Reputation, relevance of course offerings, relationships with industry partners, quality and integrity of qualifications, innovation in digital and online learning, improved course design, new business models, expanding outreach, marketing to new students
Employers	Indication of graduate employability, increasing the motivation, engagement and productivity of employees, employee skills development, provision of ongoing training and professional development, demonstrate a culture of learning, identify and address skills gaps, determine the optimum distribution of knowledge and skills across the organisation, assist with recruitment, improve employee retention

Stakeholder	What's at stake?
Professional bodies	Relevance, fit-for-purpose professional learning, new credentials to meet current and future professional needs
Quality assurance agencies and regulators	Quality and coherence of credentials, alignment to intended learning outcomes

To date in Australia, there have been no significant initiatives to engage the different stakeholder groups. Kift (2021) has acknowledged the lack of an integrated approach, but indicates that the raft of government, education, industry reviews conducted over the past couple of years hold promise for a jointly conceived vision for the future (Kift, 2021, p.ii; ATN et al. 2020).

In 2019, the Australasian Council on Open Distance and eLearning (ACODE) prepared a white paper on the landscape of micro-credentialing in Australian universities which highlighted the patchwork of policy and practice (Selvaratnam & Sankey, 2019). A second white paper was developed in 2020 to present the data collected in a follow-up survey (Selvaratnam & Sankey, 2020). It was found that some progress had been made in terms of institutional policies and the adoption of micro-credentialling, not only for postgraduate units, but also for undergraduate units, potentially in response to the government's post-COVID relief package for the roll-out of a suite of six-month online courses which were aligned with employability in priority areas such as nursing, counselling, IT, allied health and teaching (Tehan, 2020).

MOOCs are becoming more widespread across many different learning contexts, and the COVID-19 pandemic has undoubtedly resulted in a surge of interest and engagement. Shah (2020) reported that at the end of 2020, more than 180 million learners had enrolled in a MOOC. It was estimated that there were over 16,000 available across the world, leading to around 1,200 different micro-credentials. As the pandemic took hold across the world, Coursera reported 10 million MOOC enrolments over the one-month period (mid-March to mid-April 2020) which represented an increase of 640% from the previous year. There was also a 425% increase of enrolments with Udemy over a similar period, with the surge in enrolments reflecting the lockdown orders in Italy, Spain and India (Impey & Formanek, 2021). Although the growth is clearly learner-driven, as more and more people seek out alternative learning solutions to develop new skills, educational stakeholders are moving quickly to respond to the demand (Brown et al, 2021).

In April 2020, MoocLab launched the *World university rankings by MOOC performance* which included academic institutions offering courses on the foremost MOOC platforms: Coursera, EdX and FutureLearn. Coventry University sits at the top of the ranking table with 97 MOOCs, four credit-bearing programs, and 21 degrees (MoocLab, 2021a).

Fourteen Australian universities are listed in the 2021 rankings (MoocLab, 2021a), with the University of Queensland ranking number 10 in the world and Deakin University number 12. Another eight universities are in the global top 100 (Curtin University, Monash University, Macquarie University, University of Adelaide, The University of Melbourne, The University of Sydney, Australian National University and UNSW Sydney). The University of Newcastle, Griffith University, Queensland University of Technology and Murdoch University are in the top 200 institutions.

Using the EdX platform, the University of Queensland (UQ) has 57 MOOCs on offer, with four MicroMasters programs (Sustainable Leadership, Business Leadership, Leadership in Global Development, and Corporate Innovation). There is one MOOC degree: the Master of Leadership: Service Innovation (MoocLab, 2021b). UQ reported that there were over 35 million global enrolments in the university's MOOCs and MicroMasters in 2020 (UQ ITaLI, 2020, p.16).

Deakin University has partnered with FutureLearn to offer 19 MOOCs and four micro-credentials: Research methods, Digital health in hospitals, Sustainability and development, and Sports coaching and leadership. It is also possible to qualify for a MOOC degree: six degree programs are currently available in the fields of Leadership, Digital learning leadership, Information technology leadership, Entrepreneurship, Sustainable development and humanitarian action, and Diabetes education (MoocLab, 2021c).

With Deakin University's learning programs, there is a strong focus on Professional Practice credentials which involve the verification of the student's existing skills, rather than involving coursework. The credentials cover areas such as employability skills (e.g. communication, digital literacy and critical thinking), technical knowledge (e.g. data-driven marketing, content marketing, customer experience), and leadership capabilities (e.g. adaptive mindsets, leading and developing people. After the students have selected the appropriate level of credential:

- *Practitioner level*: Bachelor degree aligned, 5 years professional experience
- *Advanced level*: Pre-Master's aligned, 7 years professional experience
- *Expert level*: Master's aligned, 10 years professional experience.

The process involves developing a portfolio of evidence, including a reflective narrative and a video testimony (Deakin University, 2021).

Beyond the education and training sectors, there is evidence of recruitment companies purchasing MOOC platforms and identifying key areas of knowledge and skills that employers need. This may contribute to a bottom-up re-conceptualisation of the education and employment landscape (MicroHE Consortium, 2019). Research undertaken by Coursera has identified the significant number of students who enrol in a MOOC as 'career builders', i.e with the goal of improving their current job or finding a new job (Impey & Formanek, 2021). Reciprocally, human resource managers also stress the value of micro-credentials as evidence of employability skills for employers in industry and the professions (Blazevic, 2021).

7.2   Micro-credentials: the perspective of industry and the professions

Although there is much critical commentary in the US about the traditional university degree no longer being trusted as an indicator of preparedness for employment or future job success (Chamorro-Premuzic & Frankiewicz, 2019; McGarry, 2018; Ralston, 2021), the picture in Australia appears to be more positive. The *2020 Employer satisfaction survey* conducted by the government agency Quality Indicators for Learning and Teaching (QILT) revealed that industry supervisors had a high level of satisfaction (84.7%) with their new graduate employees across five domains, as outlined in Table 41 (QILT, 2021, p.3). Overall, employer satisfaction levels were higher in the fields of engineering, agriculture and environmental studies, education, information technology, and health, and lower in the natural and physical sciences, architecture and building, management and commerce, society and culture, and the creative arts.

Table 41. Employer satisfaction with graduate skills (QILT, 2021)

Level of Satisfaction	Graduate domains
93.7%	Foundation skills: general literacy, numeracy, communication skills & the ability to investigate and integrate knowledge
90.1%	Adaptive skills: the ability to adapt and apply skills/knowledge & work independently
88.1%	Collaborative skills: teamwork & interpersonal skills
93.8%	Technical skills: application of professional knowledge & standards
86.8%	Employability skills: the ability to perform & innovate in the workplace

In terms of the extent to which the qualifications prepared graduates for their current employment, 94% of supervisors and 88% of graduates stated that it had prepared them 'well' or 'very well' (QILT, 2021, p.20). However, it was noted that around half of the graduates were already employed in their current position before they completed their academic studies, so the broadening and deepening of their soft skills could well be attributed to their workplace experiences, rather than to their studies towards qualification itself. The specific discipline of library and information studies is not included in the survey, so unfortunately there is no data directly relevant to employer satisfaction with LIS graduates.

In recent years, soft skills have become increasingly important for employers, for example emotional intelligence, resilience, empathy and integrity, which are complex attributes that are arguably difficult to nurture in students while at university. It is anticipated that "as the impact of AI and disruptive technologies grows, candidates who can perform tasks that machines cannot are becoming more valuable – and that underscores the growing importance of soft skills, which are hard for machines to emulate" (Chamorro-Premuzic & Frankiewicz, 2019). The most valuable skills identified by employers were problem-solving, collaboration, customer service, communication, adaptability, culture fit and growth potential. These are certainly skills that feature strongly in the core and specialised competency frameworks for library and information professionals discussed in Chapter 2 and Chapter 3 of this report.

Some new business recruitment strategies have been introduced which are designed to facilitate entry into the workforce, giving people "a foot in the door based on non-traditional education and soft skills like grit, tenacity and perseverance" (Brown et al., 2019, p.235). The Glassdoor Team (2021) has listed 15 companies which do not require a degree (although the candidates' academic qualifications may still be taken into account in the hiring process) including Google, Apple, EY, Penguin Random House, Hilton, IBM and Bank of America. Another strategy is to invert the educational journey: people complete a micro-credential, which leads them directly to employment, and then they enrol later in a macro-credential at university (MicroHE Consortium, 2019; NZQA, n.d.-a).

In Australia, as in other countries, there are situations where professional or vendor qualifications certify that a staff member has completed a program of required training, generally for internal purposes, but are recognised within the industry. Examples include Microsoft Certified Professional credentials (Microsoft, 2021), Coursera Professional Certificates (Coursera, 2021) and Google Career Certificates (Google, 2021). Although these certifications are not currently quality-assured under any

government-approved standards nor accredited by a regulator, they do meet defined industry needs and they do not duplicate any existing qualification type (DESE, 2018), meaning that there could be scope to be included as a shorter form credential in the AQF schema.

Another approach that has been explored is for organisations to partner with higher education institutions to develop, endorse or accredit industry-specific, skill-based micro-credentials. As one of the benefits of these micro-credentials is the potential to focus on "rapid learning for employability" (Oliver, 2019, p.25), the endorsement of a micro-credential by employers or professional bodies underscores the alignment between learning and employability. Oliver (2019) reports that "learners are likely to be highly attracted to guaranteed pathways from micro-credentials into work experience, networking opportunities, paid employment, or promotion" (p.25). Employers are also likely to be satisfied when micro-credentials that bring a strong pool of talent to their door.

Digital badges have been introduced by some employers as a way to support and track in-house training achievements, for example by when they complete onboarding activities or complete a specific skills program. Digital badges are well-suited for small chunks of learning: they include a visual representation or icon which, when clicked on, presents the metadata about what the learner has accomplished. The digital badges may be stackable, so that when the learner attains a set of linked badges, they are awarded a metabadge. Employees at IBM attain digital badges when they complete targeted training, e.g. classes offered by Coursera, to develop specific skills relevant to their current and future career. By branding their own badges, IBM can "incentivize learning in the strategic areas they identify as areas of growth" (Rimland & Raish, 2019a, p.12).

The use of digital badges can make professional development more tangible through the access they provide to the evidence and data about the learning achieved, especially where more granular evidence relating to the attainment of personal and interpersonal skills can be presented. Visibility is also increased when the badge is embedded in "a digital work profile that can be shared in public or private [online] platforms" (Canales-Negrón, 2020, p.4). Nevertheless, some commentators have expressed cautious scepticism about the proliferation of digital badges, warning that the, since their value in the credentialling market tends to rely on their scarcity, there is a danger that if they do become too common, their intrinsic value will be degraded (Olneck, 2015; Open Badge Network, 2016).

Micro-credentials in library and information practice

Libraries themselves may also play a part in the micro-credentialing ecosystem by awarding digital badges to certify the learning undertaken by people attending training activities conducted by library staff (LaMagna, 2017, p.206):

> Libraries serve as places for learning whether they are part of an educational institution such as an academic or school library or independent of educational institutions like public and special libraries. Public libraries often support the educational mission of the local school district through afterschool programs or independent educational opportunities. Special libraries often provide educational services to those individuals associated with the parent organizations.

In the US, several academic libraries have introduced digital badging for students who complete introductory library research, information literacy or metaliteracy training, e.g. Penn State University,

Massachusetts Institute of Technology and State University of New York (Rimland & Raish, 2019b). There are several digital badging platforms that can be used to create and manage the badging process, and some digital badges can be integrated with the institution's learning management system.

Here in Australia, RMIT University has developed a Digital Literacy Stack of micro-credentials to enable students to develop "evidenced skills in planning, writing, using data, understanding and identifying emerging technologies, repurposing and sharing digital content, creating digital artefacts and writing for digital environments" (Ponte & Saray, 2019). They also offer a micro-credential on academic integrity awareness (Ruddy & Ponte, 2019). A LibGuide serves as the base for the library's micro-credentials, referred to as RMIT Creds (RMIT Library, 2021). By completing the micro-credential, students earn a digital badge which outlines the learning outcomes and students can share the badge on social media platforms, e.g. LinkedIn, so future employers see evidence of their skills. Ponte and Saray (2019) highlight the value of being a productive partner in the university's learning and teaching activities, reporting that "the involvement of institutional and industry partners has magnified the significance of the librarian's role in the digital literacy landscape, by casting a broader lens over the way digital literacy is delivered to our student cohorts" (p.550).

Rimland & Raish (2019c) discuss the role of digital badges in different settings, including formal, non-formal (or semi-formal) and informal learning environments, where the library staff collaborate with other stakeholders across the institution. Formal learning settings involve collaborating with academic staff, non-formal settings may encompass learning through an internship or a student organisation, while informal learning may encompass voluntary work or participation in a mentoring program. A community of practice has been established with the Association of College and Research Libraries (ACRL) Digital Badges Interest Group (ACRL, 2021) which serves as a forum for exchanging ideas about digital badges and micro-credentialing in libraries.

A small undergraduate liberal arts college in the US state of Florida, Eckerd College, employs work/study students in the library (Copenhaver & Pritchard, 2017). An employee training program was developed for the students to help them build the competencies they needed for their placements and to support the development of employability skills. The program is described as comprising "self-paced modules offering tiered entry points for multiple skill levels, content supporting multiple learning styles, and features students serving as both producers and consumers of training components" (Copenhaver & Pritchard, 2017, p.245). There is a set of assessment criteria for each module, with a digital badge awarded to certify learning. The learning activities have been designed to combine intrinsic motivation, for example through gamification, to make the learning enjoyable, and extrinsic motivation through the tangible reward of digital badges. As a result, "motivated learners become engaged participants in the learning process" (Copenhaver & Pritchard, 2017, p.248). Using Credly as the interoperable badging tool, the badges can be shared beyond Moodle, which is used as the LMS.

Public libraries are also using digital badges to engage users in community learning activities, e.g. book clubs, writing groups, summer reading programs, financial literacy programs, coding bootcamps or the skills acquired in the makerspace areas. Chicago Public Library has been a partner in the Chicago City of Learning initiative, offering digital badges for people who develop skills in media production, e.g. sound recording and video editing. The library service itself has also benefitted from the increased awareness across the community about its role in education and learning.

The role of teacher librarians in the Future Ready Schools program (2018b) in the US was discussed in Chapter 3 of this report. One aspect of the Future Ready Schools program focuses on the value of "students as creators, makers, programmers, designers, and artists" (All4Ed, 2021). To help teacher librarians develop the skills to confidently support their students, an online micro-credential was developed, Empowering students as creators. The course is described as "a competency-based professional learning tool, developed in partnership with Digital Promise, that allows librarians to reflect on, document, and validate their great work teaching and supporting students as creators" (All4Ed, 2021). The participants' learning is peer-assessed by school librarians and library leaders in the Lilead project coordinated by the iSchool at the University of Maryland and the Darden College of Education and Professional Studies, Old Dominion University (Lilead, n.d.). Upon successful completion of the course, participants are awarded a digital badge.

In the US, Amigos Library Services is a library co-operative with 515 members drawn from academic, state, public, school and special libraries, mainly in the Midwestern states. Amigos has developed a groups of stackable micro-credentials for library staff to gain skills in technical areas of practice: Metadata principles and practices, Metadata management tools, and Electronic resource management (Amigos, 2021). To achieve certification for a micro-credential, staff have to complete the three or four modules, culminating with a capstone project that has to be completed within three months of the final class.

Stackable micro-credentials have been identified as a valuable way to demonstrate career development to managers and to future employers. Hall-Ellis (2016) has declared that "failure to acknowledge learning and acquisition of new skills is a disservice to the individual and the organization" (p.234). To date, however, there is no common framework for evaluating the value of different micro-credentials. Hall-Ellis (2016) presented three recommendations to eliminate the confusion about micro-credentials that currently exists across the library sector. Firstly, library leaders should look to best practice models in education, business and industry to build a sector-relevant recognition system. Secondly, the appropriate badging platform(s) need to be identified for the credentialling system. Thirdly, professional associations should be encouraged to investigate and develop the digital badge framework. It is argued that, since "stackable micro-credentials (e.g. digital badges) are appropriate for local, state or national organizations to issue, determining the appropriate agency to issue them is essential" (Hall-Ellis, 2016, p.235). Dale (2016) also stressed that members of professional bodies expect to be able to turn to the association "as a trusted advisor, who can recommend the providers of education and services" (p.61).

In the UK, CILIP has introduced a program of Short Course Accreditation, launched in April 2020 (Berry, 2020). The role of Short Course Accreditation is explained (CILIP, n.d.-j):

> CILIP accreditation stands for quality. By choosing a CILIP accredited course, learners can feel confident that the content is high quality and has been tested against the professional standard by an independent assessor. The CILIP accreditation certifies quality learning and delivery as well as relevance to the employment market.
>
> Our Short Course Accreditation offers the same quality guarantee to shorter and modular courses which don't lead to a formal qualification. This includes modular courses, day courses and online courses within the Library, Knowledge or Information field.

Accredited Short Courses are recommended for L&D (Learning and Development) professionals booking training for their organisations and independent learners looking to enhance their skills.

The assessment criteria for CILIP Short Course Accreditation are outlined (CILIP, n.d.-j):

- Relevance of the course to the professional standard (CILIP's PKSB)
- The learning provider is providing a high-quality learning experience
- The learning provider engages with employers to ensure that programmes are relevant
- Staff and trainers are up to date with current professional practice
- Learners are encouraged to engage with their professional body CILIP.

Short courses are accredited for three years. At this point in time, two courses have been accredited: The Chief Data Officer Summer School, and Knowledge for Healthcare Learning Academy Short Course Programme.

The future world of work

In their exploration into the workforce of the future, PWC identified the megatrends impacting on our world: shifts in global economic power, technological breakthroughs, demographic shifts, rapid urbanisation and resource scarcity (PWC, 2017, p.7). Drawing on these trends, the researchers considered four scenarios: the Blue World dominated by capitalist principles, the Red World driven by technological innovation, the Green World with a strong focus on sustainability, and the Yellow World that centres on human and community values (PWC, 2017, p.11). The predicted characteristics of the future workforce are presented for each of the scenarios – and there is certainly room for diverse views across society.

When considering value-related behaviours, it was felt that the workforce attributes presented in the Yellow World scenario would resonate with people the library and information sector. PWC predicted that workers would "seek out greater meaning and relevance in what they do", enjoy "working for organisations with a strong social and ethical record", with "the desire to do good, for the common good" (PWC, 2017, p.25). In a US research study, Bentley University's reported that millennials want their work to provide the opportunity to make a positive impact on society, with 86% of research respondents indicating that it was a priority for them to work for companies that were socially responsible and ethical (Schlitzer, 2018).

Focusing on social and ethical values, there was a sense that workers were likely to feel stronger loyalty towards "people with the same skills or cause", rather than to their employer (PWC, 2017, pp.25-26):

> The Yellow World is the perfect breeding ground for the emergence of new worker Guilds, similar to the craft associations and trade fraternities of the Middle Ages. These Guilds develop in order to protect, support and connect independent workers and often provide training and other benefits that have traditionally been supplied by employers.

> Guilds provide members with a strong sense of identity – individuals see themselves as members of their profession, identifying with each other because of their particular skills set, interests and goals.

> Guilds support workers to build skills and experience by providing training and career development support alongside other help and advice.

Since historically guilds have been seen as the "first incarnation of professional associations" (Dawson, 2016, p.25), the ideas may well align with the understandings of members of the professional association. The attributes of the future workforce presented in PWC's Yellow World scenario do reflect the earlier discussions in this report on professional identity, values and ethics and the scope and development of professional skills. In a study into the future relevance of professional associations prepared by Chartered Accountants Australia and New Zealand and the School of Accounting, RMIT University (Guthrie et al., 2016), Dale (2016) states that "it is the role of the professional association to develop the new skills required as part of its lifelong learning professional development, helping members to adapt and change over the course of their careers" (p.59). In the next chapter, the discussion returns to the field of library and information services to examine the role of various professional associations in encouraging, facilitating, and recognising career-long learning.

8.   Continuing professional development

"Lifelong learning allows for Australians to keep pace with the changes and capabilities required for the future of work" (PWC & ATN, 2018, p.10). The pace of change in the workplace, driven by technological developments, along with the growing number of older workers (AlphBeta, 2019), means that "lifelong learning must become a practical reality for people, it cannot stand as an abstract goal" (Noonan et al., 2019, p.8). Professional development supports the employee's career journey: individual learning gaps and personal career goals are crucial elements for a learner-driven approach to CPD: "only individuals can learn, and only they can choose to apply their new knowledge, skills and behaviours to work" (Chartered Institute of Personnel and Development (CIPD), 2021). Professions Australia encourages new graduates and young professionals to take control of their own CPD and to regard it as an investment that will deliver immediate as well as longer term benefits (Professions Australia, 2021). Nevertheless, a truly successful career journey will involve other stakeholders who have separate and shared interests in the development of a skilled workforce. Beyond the learners themselves, there are the educators, trainers, employers, professional bodies, and government agencies (Salin, 2019). The transformative nature of work will therefore demand a cohesive understanding of the role of continuing professional development (CPD) across industry and the professions.

On top of the patterns of technological disruption in the workplace, the challenges presented by the COVID-19 pandemic have "galvanised business, government and education sectors to come together to tackle the impacts of health and economic shocks" (ATN et al., 2020, p.4). Acknowledging the need for a shared vision for education and employment that embraces a lifelong approach to skills development, the ATN has come together with TAFE Directors Australia (TDA), the Australian Industries Group (Ai Group) and AlphaBeta, now part of Accenture, as part of a collaborative initiative to stimulate discussion about the optimum strategies, funding, partnerships and accreditation to support modern, innovative and high-quality models for learning and professional development.

This approach resonates with IFLA's *Guidelines for continuing professional development: Principles and best practices* (Varlejs, 2016) where it is emphasised that "every [library and information] practitioner is part of a learning ecosystem that encompasses fellow library/information workers, employers, professional associations, higher education continuing education units, vendors and publishers, government agencies and non-governmental organizations" (p.17). The value of these *Guidelines for CPD* to the library and information profession has stretched worldwide: the summary document of the has been translated into all of IFLA's official languages (French, German, Spanish, Chinese, Arabic and Russian), as well as Italian and Swedish, and a poster version has already been translated into 37 languages.

The library and information profession, locally, nationally and internationally, is not immune from the changes impacting on employment and learning: "Just as higher education at large is considering new forms of credentialing and other strategies to promote lifelong learning and workforce readiness, library professional training and credentialing will be reworked to meet this future" (Calvert, 2020, p.14). Varlejs (2016) exhorts all stakeholders in the learning ecosystem "to embrace quality principles and act in support of best practices for continuing learning for the library/ information profession" (p.17).

The theme of the library and information professional's commitment to continuing professional development (CPD) is woven through this report: it is included as a dimension in many of the different skills frameworks, it is central to our understanding of the skills required for future professional practice, it is embedded in our professional values, and it is an essential building block for attaining LIS qualifications and for creating a strong future-focused workforce. As noted earlier, the professional association can play a crucial role in ensuring its members develop the new skills they will require over the course of their career (Dale, 2016). The discussion that follows moves beyond the coordination and delivery of CPD activities to consider the formal recognition of continuing professional development and the relationship with professional registration.

8.1 Recognition and revalidation of continuing professional development

Breakey et al. (n.d.) reported that "the major new requirement imposed on practicing professionals to ensure their ongoing qualifications to practice is CPD" (p.3). Indeed, the Profession Standards Councils (PSC) has noted that, frequently, the completion of CPD requirements is "a condition of membership or registration to a professional governing body" (PSC, n.d.-c), as for example for lawyers, doctors, accountants, engineers and financial planners. The key CPD requirements for these different professions are discussed in the PSC's summary, *Continuing professional development requirements* (PSC, n.d.-c). Typically, CPD requirements "take the form of several credits/points/hours practitioners must spend each year on learning activities" (Breakey et al., n.d., p,4). Accordingly, a number of professions have specific requirements for CPD, not only to assist individual professionals to engage in personal and career development activities, but also to ensure that they maintain the expected high standards of performance. Compliance is generally a self-regulatory process, monitored through internal audits of members' CPD records.

In her study of the impact of national library associations on the profession, Henczel (2016) identified professional development as one of the core roles and responsibilities of the association: "The provision of relevant professional development and training opportunities and communication of industry issues and developments to members of the profession, as well as professional registration" (Henczel, p.42). Where professional associations do not have mandatory CPD schemes where compliance is a condition of professional practice, some have introduced professional registration schemes. Professional registration has been described as "a self-monitored system whereby members register their own participation in PD activities and submit details to the association" (Henczel, 2016, p.227). The process of professional registration typically involves enrolment in the association's CPD scheme, mapping learning activities to a skills framework or body of knowledge, keeping an activity log to record the time spent and writing reflective pieces to consider the application of the learning to professional practice. Support may also be available through a mentoring program.

In the library and information profession, ALIA has the Certified Professional scheme, CILIP has both Certification, Chartership and Fellowship categories, and LIANZA runs its Professional Registration scheme. While references have been made to these initiatives in various sections of this report, the details of each scheme are summarised here.

8.1.1 ALIA Professional Development scheme

ALIA's CPD scheme was originally introduced in 2000, enabling members to adopt a more structured approach to their professional learning (ALIA, 2004). Members could register, voluntarily, to join the scheme with a number of supporting resources, for example background information on the categories of CPD activities, e.g. attending a conference, writing for publication or completing a formal course of study; access to the tracking database to record the summary details of CPD activities; CPD record sheets to provide documentary evidence for audit purposes; and the *ALIA career development kit* as an introductory activity to analyse current skillsets and to identify possible skills gaps. The concept of the *Certified Professional (CP)* was available to members to reflect their achievements, as well as the professional status of *Associate Fellow* (no longer used).

ALIA Certified Professional & Distinguished Certified Professional

Our understanding of the value of professional learning has matured over the years, and since 2020, all new members at the levels of Associate (*AALIA*), Library Technician (*ALIATec*) and Allied Field (*Allied Field*) are admitted to the CPD scheme as *Certified Professional (CP)* members. At the end of their first year in the scheme, they may use the postnominal *CP* after the pronominal for their professional status, thus *AALIA (CP), ALIATec (CP)* or *Allied Field (CP)* (ALIA, 2021m). The pathways into the different categories of membership were discussed in section 6.1.3 of this report.

The CPD scheme works with a three-year cycle of compliance, with members required to complete a minimum of 30 hours of CPD per annum, and the minimum total of 120 hours over the triennium. The time spent in learning activities is recorded as points (1 hour = 1 point), reported over the 12 month period, 1 July – 30 June. The integrity of the CPD scheme is monitored with an annual audit of 10% of participants. At the end of the triennium, the member attains the *Certified Professional Certificate*, with their name included in the roll of Certified Professionals which is posted on the ALIA website. After five years as a *Certified Professional*, an application may be made to attain *Distinguished Certified Professional* with the postnominal *DCP*.

ALIA's policy document *Foundation knowledge for entry-level library and information professionals* (ALIA, 2020e) is used as the skills framework to guide the development and accreditation of the qualification pathways. Information on the different pathways is presented in Chapter 6 of the report. In the area of CPD, however, ALIA has a range of specialisations which have been developed to enable members to demonstrate the alignment of their CPD activities to their specific area of professional practice, e.g. Public Library. There are currently ten professional specialisations (ALIA, 2021m):

- Data
- Government
- Health
- Heritage Collections
- Indigenous Engagement
- LIS Practitioner Research
- Public Library (with eight narrower specialisations)
- Research/Academic (with three narrower specialisations)
- Schools
- VET Library.

For each specialisation, there is a set of relevant competencies, as well as a skills audit tool. Each competency in the skills audit tool is broken down into a series of sub-competencies which represent the typical areas of knowledge and skills for the competency. To complete the skills audit, the library and information professional rates the level of their expertise on a five-point scale:

- I can do this really well
- I can do this well
- I can do this
- I need more practice
- I need to learn this.

There is also an option for people to state that the skill is not of interest or relevance to their work.

This activity allows people to identify the specific gaps in knowledge and skills, mapped to the relevant competencies, where investment in CPD will be of value. At the end of the first year in the CPD scheme, when members are entitled to add the postnominal (*CP*), they may also add the relevant specialisation, e.g. *AALIA (CP) Data*. ALIA stipulates that alignment with a particular specialisation will require members to complete a minimum of six competencies within the specialisation to be awarded the *Certified Professional Certificate.*

ALIA continues to offer a range of resources to support the member's CPD journey, e.g. instructional videos and FAQs. The original *ALIA Career development kit* has been revised and updated (ALIA, 2017) which provides detailed guidance about how to plan, undertake, record and evaluate CPD. There is also a guide to professional reflective practice.

Members add the details of their CPD activities to their *CPD logbook*, which is part of a dashboard showing progress made with CPD hours during the current year, over the last three years and over the last five years. The digital platform also allows members to manage other interactions with ALIA, e.g. registrations for events, purchases and job advertisements.

Links are provided to CPD opportunities, including the ALIA Training opportunities (ALIA, 2021n) and a tip sheet of *100+ ideas for your professional development.* A monthly newsletter, *PD Postings*, features different learning experiences ranging from free activities such as webinars, online courses, podcasts, articles and blog posts, to eResources made available to ALIA members. Although *PD Postings* is a member-only newsletter, during the pandemic, an open access issue was distributed in March 2020 (ALIA, 2020h).

Revalidation

In contrast to LIANZA and CILIP, ALIA does not require members to revalidate their full professional status, i.e. as an Associate member (*AALIA*), Library Technician member (*ALIATec*) or Allied Field member (*Allied Field*). The focus is on members demonstrating their ongoing commitment to CPD through the scheme with the postnominals *CP* or *DCP.* If a member fails to attain the required hours of CPD activities, they may no longer use the CPD-related postnominals. However, the move to enrol all new members in the CPD scheme has indicated a desire to centre the importance and rigour of CPD more firmly within professional membership.

Health library and information professionals

CPD is a crucial dimension of the health librarian's practice: the competency of Professionalism is one of the eight ALIA HLA competencies (ALIA HLA 2018). The competency framework was reviewed in section 3.3.2 of the report. The competency of Professionalism stresses the importance of maintaining currency of professional knowledge and practice, and upholding professional standards and values (ALIA HLA, 2018). This is demonstrated through membership and participation in the professional association, undertaking formal and informal CPD activities, and maintaining professional certification through the ALIA Health Specialist CPD scheme. The health specialisation competencies (ALIA, 2021o) are directly aligned with those presented in the ALIA HLA competency framework.

For health librarians, there are strong arguments for the certification of professional status (Ritchie, 2008), with the accompanying requirement to revalidate this professional status by maintaining knowledge and skills through CPD (ALIA HLA, 2011). As health library and information professional are employed in a regulated professional sector, they have long been interested in a professional certification and revalidation process. The health professions are registered and accredited by the Australian Health Practitioner Regulation Agency (AHPRA). For AHPRA, CPD is key element of professionalism as it is "a requirement for all registered health professionals, with details of the number of credits/points/hours that practitioners must spend each year on learning activities published in the professions' registration standards" (Ritchie & Hallam, 2011, p.18). In contrast to their colleagues who have a professional mandate for CPD, health librarians may find that they are not eligible for employer support for professional development, including funding. Concerns have therefore been expressed about the potential professional marginalisation of health library and information professionals if they are not recognised as representatives of a valued area of specialisation within the wider health profession.

ALIA Proficiency Recognition Program

The *ALIA Proficiency Recognition Program* (PRP) (ALIA, 2021p), developed as part of the CPD program, is a professional learning framework designed specifically for ALIA Personal General Members or Student Members who are "interested in starting their Library and Information Science learning journey or undertaking their first ALIA accredited course" (ALIA, 2021q).

The PRP comprises four competencies (ALIA, 2021p):

- Know your library and/or information service context
- Understand your library and/or information service structure and community
- Library and/or information service collections in practice
- Engaging with your community.

In the associated *Proficiency Recognition Skills Audit*, each of the competencies are broken down into a number of component areas of knowledge and skills (ALIA, 2021r). The competency for knowing the library and information service context encompasses a broad understanding of the political, economic, social, cultural environmental factors that may impact on the library and information profession. These may include the UN Sustainable Development Goals (SDGs), the historical background and changing nature of the library and information sector, the role of libraries in the community, the role of library associations, relevant legislative provisions including copyright and legal deposit, as well as knowledge about the overarching professional values such as human

rights, inclusion and equality, freedom of information, privacy and confidentiality, and ethical behaviour. PRP participants are invited to rate their current capabilities for each area using the same five-point scale as the skills audits for the various CPD specialisations. This helps them identify the gaps in their knowledge and skills which can be addressed through learning and development activities.

Administration of the PRP follows the same pattern as the CPD scheme, with ALIA's digital logbook used to track the learning activities and to capture the participant's reflective journaling. Their commitment is to complete a minimum of 20 hours of activities per annum, with a certificate provided to recognise the progress made.

8.1.2 LIANZA Professional Development scheme

The professional pathways offered by LIANZA have been discussed in section 6.2.1, focusing on the Professional Registration (RLIANZA) scheme with three tracks for applicants: Route A: with a recognised New Zealand qualification, Route B: with a recognised international qualification, and Route C: other circumstances.

LIANZA states that members who have been granted RLIANZA status should commit to a three-year cycle of professional development (LIANZA, 2021e). At the end of the period, members must apply for the revalidation of their professional status, providing evidence of their professional development activities and achievements.

Revalidation

The revalidation process involves the preparation and submission of a Revalidation Journal. The journal is to be presented as an Excel spreadsheet; a template outlining all six BOK clusters (LIANZA, 2021a) is provided (LIANZA, 2021f). The minimum requirements for the journal are (LIANZA, 2021e):

- Coverage of all six BOK clusters, with at least two entries for each cluster
- Activities drawn from three of the four domains of practice:
    - Knowing: professional knowledge
    - Doing: professional practice
    - Sharing: communication
    - Leading: professional leadership
- 18 entries for the three year-period (but no more than 21 entries)
- Thoughtful and reflective comments on the learning outcomes of each activity.

The revalidation journal should be submitted to LIANZA with a covering letter that includes a self-assessment, plus a letter of verification from the employer "to show that they have viewed your journal and it is true and accurate to the best of their knowledge" (LIANZA, 2021e). Template files are provided for these documents.

While requesting succinct submissions, the focus of the revalidation journal should be on the quality of the journal entries, highlighting the relevance of the learning activities to professional practice. Importantly, the CPD outcomes should represent a good balance of knowledge and skills across the BOKs and the domains, with reflective insights about the depth of learning attained and the value of the learning process.

The LIANZA Professional Registration Board, with seven members, are responsible for the assessment of the professional registration and revalidation submissions; they also approve mentors and advise on CPD programs. In the early days of the LIANZA professional registration scheme, Broady-Preston and Cossham (2011) described the association's mentoring program which was established to assist recent graduates during their first 12 months after graduation. The challenges of running this program in a country with a small population was highlighted: "Finding a mentor in a particular location with particular understanding of the graduate's chosen type of library, and meeting the LIANZA requirements of being registered and more than five years in the profession, is not easy" (Broady-Preston & Cossham, 2011, p.34). Currently, there is no information about mentoring programs on the LIANZA website.

Once successfully attaining professional registration, the member's name is included on the Registration Roll (LIANZA, 2021g). The roll provides membership details, including the date for revalidation.

8.1.3   CILIP Professional Development scheme

The qualifications pathways offered by CILIP have been reviewed in section 6.2.2, covering CILIP-accredited library and information courses and the Professional Registration avenues of Certification (*ACLIP*), Chartership (MCLIP) and Fellowship (*FCLIP*). Once a member has been awarded professional status, they are required to maintain this status by committing to a minimum of 20 hours of CPD activity over a 12-month period. Revalidation of Professional Registration is mandatory, undertaken annually.

Revalidation

The rationale for the revalidation of Professional Registration is presented on the website (CILIP, 2021-m):

> By undertaking Professional Registration, you've already shown your commitment to improving your professional knowledge. One way to demonstrate your ongoing commitment is to revalidate your CILIP Certification, Chartership or Fellowship and ensure you get the professional recognition you deserve for keeping your skills up-to-date and staying in touch with the latest developments in the profession.

This annual activity of retaining professional status involves participating in CPD activities and providing reflective evidence about the relevant development of knowledge and skills, mapped to the assessment criteria appropriate to the level of Professional Registration. Guidance is provided about how to address the revalidation criteria for each category: Certification (CILIP, 2019a), Chartership (CILIP, 2019b) and Fellowship (CILIP, 2019c). CILIP notes that revalidation can be an iterative process, with the feedback given for one revalidation submission being valuable for the following one.

A digital template is provided for the revalidation application: the member must address the same three criteria which represent the focus for Professional Registration, i.e. personal performance, organisational context and knowledge of the wider professional context (see also section 6.2.2 in this report), with the relevant CPD activities mapped to all three criteria. Revalidation applications are submitted online. The assessment process is based on sampling: 5% of submissions are reviewed by assessors (CILIP, 2021n).

8.2   Summary

In summary, there are similarities and differences between the approaches to encouraging and supporting CPD, coordinated respectively by ALIA, LIANZA, CILIP and State authorities in the US. Henczel (2016) presented a comparative table of the features of the three schemes (pp.227-229), based on the information current at the time of her study. Positive views about CPD were shared by the research respondents in all three countries, i.e. Australia, New Zealand and the UK, with a shared understanding that the pace of change in the library and information sector was the key driver for their commitment to career-long learning and development. One respondent in the UK explained that "the Chartership scheme is a program that has made a difference to me personally and has also up-skilled the profession. It has provided a platform for people which I think has been a benefit for the profession" (Henczel, 2016, p.230).

Nevertheless, concerns were expressed that employers were less vested in CPD. This view was also noted by Stephens, Partridge, Davis and Snyder (2021) in a small research study that investigated the experiences of Australian public librarians with professional learning and development, where some respondents reported that they were disappointed by their manager's lack of support for professional development. Henczel found that in the UK there was evidence that some employers did not have a clear understanding about the value of processes like certification and professional registration on both the personal and professional levels. In situations where employers were not members of the library and information profession, the library and information association had a significant role to play to communicate the sector-wide benefits that flow from professional development and growth (Henczel, 2016).

The revalidation of professional status is therefore a valuable strategy for the professional association, as reported by Ritchie and Hallam (2011): "individuals are able to demonstrate their commitment to improving their knowledge and skills to current and future employers; employers benefit from having a workforce that explicitly demonstrates its commitment to continuous improvement, resulting in higher quality work; and the information profession as a whole demonstrates its commitment to CPD, thereby raising the status of the professional body" (p.19). The changing nature of work means that continuing professional development has already become a practical reality for library and information professionals. In the review of the AQF, Noonan et al. (2019) confirmed that traditional qualifications were losing their value and diverse pathways to further learning and lifelong learning would inevitably be of increasing importance in the future.

9.   Conclusions and key findings

This report, written as part of the *Professional Pathways* project, has explored a range of themes which are central to ALIA's vision for "a strong, diverse and future-ready workforce with contemporary skills that ensures the quality of library and information services across Australia" (ALIA, 2020d, p.1). One of the principal objectives for the project is to develop strategies to "attract clever people from a wide range of backgrounds to the industry, who share the ethos and values of the profession, in order to be inclusive and relevant" (ALIA, 2020d, p.23).

Following the introduction to this research work (Chapter 1), an extensive range of contemporary skills frameworks, developed and disseminated by professional associations and employer groups in Australia, New Zealand, the UK and the US, were examined (Chapter 2). Some frameworks cover the core knowledge and skills required for professional practice across the breadth of the library and information sector, while others endeavour to express the deeper perspectives of the skillsets needed in specialised areas of practice. The analysis provides clear evidence that the library and information profession is a far from homogenous one: the frameworks capture the subtle differentiation between the public, academic and research, special, health and school library and information services, as well as the allied fields of archives and records and information management.

The skills frameworks developed by national library associations are, by their very nature, 'comprehensive': they are often described as presenting the 'core' professional competencies which refer to the knowledge, skills and attributes that all staff, in any roles and at any level of the organisation, should have. The majority of frameworks include a combination of professional knowledge, technical competencies and behavioural skills.

ALIA's core competencies policy outlines "the foundation knowledge required by an entry-level graduate employed in the library and information sector" (ALIA, 2020e) and, as such, plays a key role in ALIA's course accreditation program. The focus is on *knowledge*, rather than *skills*: the ten domains of knowledge should be interpreted within the scope of the levels of the Australian Qualifications Framework (AQF, 2013), i.e. for students enrolled in the vocational Diploma, the Bachelor degree or the Master's degree.

The LIANZA Bodies of Knowledge (BOKs) (2013a) collectively embrace the core areas of competency for the whole profession, but it is assumed that individual library and information professionals will develop more in-depth knowledge and expertise within the area(s) of specialisation relevant to their employment. The BOKs are primarily used for the purposes of professional registration and the revalidation of professional status.

CILIP's Professional Knowledge and Skills Base (PKSB) (CILIP, 2021a) has been developed to map the skillsets required in the expansive fields of the information, library, knowledge and data professions. The value of the PKSB is therefore wide-ranging: at an institutional level, it is used by universities in the accreditation of academic courses and vocational training programs, by employers who refer to it in skills analysis, staff development and workforce planning, and also by individuals as the framework for their professional registration (Certification, Chartership and Fellowship) and for mapping their learning for revalidation of their professional status.

CILIP places ethics and values at the heart of the profession to acknowledge the fundamental role they play for all library and information professionals. Emphasis is also placed on the core principles of a shared understanding of the wider library, data, information and knowledge sector, and the more immediate organisational and environmental context of a workplace. There is also an expectation that all library and information professionals will be committed to professional growth and development throughout their career. The scope of the PKSB encompasses the range of professional expertise required in different areas of practice, as well as the generic skills that are likely to vary according to an individual's role and responsibilities. When applying for professional registration or working towards revalidation of their professional status, individuals map their experience, learning and development to the relevant areas of expertise.

In contrast to these general frameworks, the specialised professional skills frameworks are naturally much narrower in focus. In Chapter 3 it was found that some of these frameworks focus on 'what is distinctly their own field of practice', while others include the 'core' or common competency areas that are included in the whole-of-sector frameworks. For the purposes of this report, it has been valuable to identify the elements of differentiation for the common categories of library and information services: public libraries, academic and research libraries, special libraries, school libraries, and the allied fields of archives, information management and records management.

Very succinctly, the two elements of differentiation identified for the public library sector were the fundamental service orientation and the community orientation. "At its core, a public library is defined by the services it offers, the way it delivers those services to the community, and the ways in which it is managed" (APLA & ALIA, 2021, p.8). The framework for Australian public libraries incorporates the three internal pillars of *service management*, *service offering* and *service delivery*. Engagement with the community and the drive to achieve positive community outcomes represent the external environment. The role of public libraries to serve the community in all its diversity is encapsulated in the *IFLA code of ethics*: "To serve the broad spectrum of community members, regardless of age, citizenship, political belief, physical or mental ability, gender identity, heritage, education, income, immigration and asylum-seeking status, marital status, origin, race, language, religion or sexual orientation" (IFLA, 2012a). As cultural heritage institutions, National and State libraries have an additional layer of differentiated responsibility within the communities they serve.

The elements of differentiation distilled from the skills frameworks for academic and research libraries reflect the context in which the libraries operate, i.e. the national education and research policy environment and the need to contribute to national and institutional performance outcomes in research, as well as teaching and learning. The notion of 'scholarship' is distinctive, particularly in terms of the creation and dissemination of new knowledge, engagement with discipline-specific research cultures, methodologies and processes, and the evolving fields of research data management, scholarly communication, management of scholarly output, measuring research impact, and the various facets of the open agenda.

By their very nature, special library and information services are all quite distinctive, depending on their role and mission in the parent organisations. The essence of the differentiation from other areas of library practice lies in the sector-specific or industry-specific information and knowledge environments, for example in the healthcare sector, the legal sector or a scientific field. This may mean that the staff, like staff in large academic and research libraries, need to understand discipline-

specific research cultures and methodologies. A holistic view of the role of information and knowledge was critical, whereby there is an understanding of the strategic nature of information assets to advance the mission of the parent organisation. Special library and information professionals may be responsible for the development, deployment and management of information resources and services, under the frameworks of information governance and compliance. Often working independently, they also need to build and nurture key strategic relationships and partnerships.

The elements of differentiation for teacher librarians are again contextual: they provide leadership within the school environment, they partner with teaching staff and support their students' intellectual and social development. As they have foundation qualifications in education, they contribute to successful student learning outcomes through their knowledge of the curriculum and pedagogy, which is combined creatively with their information management expertise to build a dynamic and vibrant learning environment. Teacher librarians actively promote literature and reading, advocate for literacy as the springboard to lifelong learning, and foster the ethical creation and use of information through digital literacy, critical thinking and the active use of technology.

In the allied fields of archives, information and records management, the competency frameworks highlight the legislative and policy issues that underpin the curation and stewardship of records and archival materials. The principal concepts encompass the provenance, integrity, preservation and conservation of records, with an understanding of information architecture, information flows and information security.

The interest in developing an understanding of the future-ready workforce directed the discussion to the review of skills for future practice (Chapter 4). The information landscape is constantly evolving and skill requirements for the library and information profession are shaped by social, demographic, economic and technological developments. Although the demand for new skillets will depend on the immediate context, it was found that new areas of professional practice prompted ethical questions. Accordingly, the investigation moved to the topic of our professional values and ethics (Chapter 5) to better understand the true nature of 'the shared ethos and values of our profession'.

The values and ethics of a profession represent an intrinsic element of professional identity, both individually and collectively. Three principal factors that contribute to professional identity were identified as self-labelling as a professional, the integration of skills and attitudes as a professional, and the perception of context in a professional community (Gibson et al., 2010). In the library and information sector, the expanding context of the professional community is acknowledged: the introduction of new roles that are required to support an increasing spectrum of services and programs has led to the employment of people from other disciplines beyond library and information science. Today, people with a far more diverse range of professional skillsets contribute to the delivery of "quality library and information services that anticipate and meet the needs of the population" (ALIA, 2021s, p.3). Research has revealed that as these individuals became immersed in "the rules, skills, values, norms, customs and symbols that make up that [professional] community's culture" (Fraser-Arnott, 2016, p.18), they were eager to be recognised as 'library professionals'.

When the culture of a professional community is determined by its core values, the strength of a diverse profession will depend on a deep and united understanding of what distinguishes that specific professional environment from other professional environments. The literature review

confirmed that the profession is indeed characterised by common core values and a shared ethos: across the world library and information professionals are committed to service, equality of users, access to information, intellectual freedom, literacy, information literacy, and preservation of the cultural memory. These are underpinned by the library and information professionals' belief in the greater good of society and the desire to always demonstrate integrity and trustworthiness in their professional practice.

The desire to develop a strong, diverse, future-focused workforce stimulates questions about potential strategies to realise the vision, and what might need to change in the future. To better understand the current situation of education and training for the library and information profession, the vocational education and training (VET) and higher education pathways are discussed (Chapter 6). Professional accreditation of LIS courses represents a key dimension for entry into the profession, as well as being a defining feature of the different membership categories with the professional associations. The present models of professional pathways in Australia, New Zealand, the UK and the US are therefore examined, which include professional recognition for graduates with an academic qualification in LIS, as well as professional registration attained through experience in the LIS field, with the submission of a reflective portfolio of knowledge and skills mapped to the association's competency framework, e.g. CILIP's PKSB (2021a) or LIANZA's BOKs (2013a). A comparative perspective is provided with the overview of contemporary qualification pathways in several other professions, including the fields of accounting, data management, law and architecture. No accurate data was identified to enable an objective analysis how the different strategies adopted by the different professional associations had impacted on their membership.

It was found that many professions have begun to move away from the traditional pathway of an undergraduate degree plus professional experience, with increasing attention paid to bridging courses, short courses and CPD activities to provide learners with more flexible and adaptable avenues to professional qualifications. The future of professional learning is rapidly evolving: business and industry, educators and trainers, and government agencies are exploring the opportunities and challenges associated with shorter form credentials. The patchwork landscape associated with micro-credentials, MOOCs, foundation courses and training modules is reviewed, on the one hand from the perspective of the education provider, and on the other hand from the perspective of industry and the professions (Chapter 7). Given the anticipated fragmentation of education and employment markets, the research revealed that there was scope for professional associations to engage with members by encouraging, facilitating and recognising their career-long learning journey.

There are very strong arguments for continuing professional development across all areas of the library and information sector, but there was no coherent approach to managing a CPD program. The different CPD schemes offered by ALIA, LIANZA and CILIP are explored (Chapter 8). Across the professions, in response to the rapidly changing world in which we live, the requirement to revalidate professional competence has become far more prevalent. Some revalidation schemes are quite prescriptive, while others offer the learner greater autonomy. One trend reveals the increasing opportunity to include work-based learning to present evidence of professional development for revalidation purposes. The adoption of a critically reflective approach to real-world learning is a powerful strategy for individuals to look in detail at their personal and professional practices and to integrate new knowledge with existing knowledge. This encourages them to look for ways to update

their skill and knowledge base and to be actively involved in their own learning and development to improve their practice. In their small study of Australian public librarians, Stephens et al. (2021) found that there was a shared "thirst for knowledge, new skills and improved systems" (p.8).

In a number of professions, including teaching, nursing, social work and architecture, the concept of 'active professionalism' is discussed, where active professionals are described as being "deliberately committed to continuous learning, widening knowledge and mastering their… skills" (Szplit, 2020, p.124). Active professionals consciously evaluate their own capabilities, they look for opportunities to improve their practice and they are motivated to accept challenging tasks. Importantly, active professionals look beyond their professional silos to find ways to work with others. This results in a high level of autonomy, resourcefulness and ethical responsibility in the search for professional excellence (Spratt, 2015). The library and information sector has been described as a rich environment for active professionals who want to be challenged "to continually try something new and different and to be open to learning at all times" (Stephens et al., 2021, p.8).

These active professionals have been described as "strategic learners" (Stephens et al., 2011) who are proactive about seeking out the learning opportunities that will help them achieve their personal and career goals. They are highly motivated about professional learning and prioritise it as "integral to their current role and planned future roles in the information profession" (p.8). This means that there is already a strong foundation for the actualisation of the vision for the "strong, diverse and future-ready workforce with contemporary skills that ensures the quality of library and information services across Australia" (ALIA, 2020d, p.1).

The environmental scan and literature review highlighted the increasing level of interest amongst educational, industry and policy-making stakeholders in more flexible, personalised forms of credentialled learning which leverage the opportunities of work-based learning and development. These new pathways "will no longer be linear and hierarchical: they will need to recognise that throughout adulthood, people need to develop new skills in different areas and at different levels" (Noonan et al., 2019, p.8). In the library and information sector, the move away from the established approach of 'one-size-fits-all' qualifications will require all stakeholders to adopt a new mindset and to work collaboratively to conceptualise the professional pathways framework that will enable ALIA's vision to become a reality.

Interestingly, the spatial information sector sought to build its understanding of the broad career development process for the multi-disciplinary, transdisciplinary industry. It was acknowledged that there was no single pathway into a very diverse professional environment (Performance Growth, 2008). A comparison is made with the information management and communication technology industry where, on the one hand, it is difficult to define the professional boundaries or to communicate the career options in a simple way. On the other hand, "it is the sheer variety and reach of the industry that will enable many workers and potential workers to see a place for himself or herself within the broad umbrella of the… industry" (p.27). The belief in "building strength from diversity" is echoed in CILIP's view of the library and information sector: "we believe that the diversity and adaptability of our skills is a strength which we need to build on to secure the long-term future of the information professional workforce" (CILIP, 2018b, p.1).

Thus, ALIA is not alone in seeking to address the challenges of the changing nature of work and the resultant shifts in professional education, training and employment in library and information services. This report has been informed in many areas by the meaningful research undertaken and the strategic initiatives adopted by CILIP in the UK, including the new *Professional Knowledge and Skills Base* (PKSB), *Ethical framework*, *Workforce development strategy* and *Public library skills strategy*; the association's investment in professional registration and revalidation of professional status; and initiatives such as the development of apprenticeships, short course accreditation, and research into the impact of artificial intelligence and machine learning on the broader library, information, knowledge and data management sectors. The project team is especially grateful to CILIP staff for the collegiate support provided through the online meetings, discussions and sharing of documents. While there are, of course, social, political and geographical differences between the UK and Australia, there are many issues, such as CILIP's strategic program strands of widening participation, promoting professional excellence, helping members to succeed, and advocating for the profession, that are common to the library and information profession in both jurisdictions.

Key findings

This *Technical Report* makes it clear that ALIA's investment in the *Professional Pathways* initiative is timely and vital to meet the challenges and opportunities of the evolving work environment. Governments, employers, educators and workers (current and future) are all aware of the need to change the traditional model of education for and training in the professions to drive excellence and currency among professionals. A new mindset of life-long active professionalism, based on core ethics and values and with support for whole-of-career development, is needed for libraries and information services to grow and develop in line with advances in society and technologies.

With support from key stakeholders, the *Professional Pathways* project is positioned to create a sustainable future for the library and information workforce in Australia. In addition to the conclusions in the body of the report, we have distilled the following key findings from this report to inform the next stages of the project:

1. Alongside core professional knowledge, values and ethics sit at the centre of professional practice and professional identity; these differentiate the library and information profession from other sectors.

2. When reviewed in light of national and international skills and competency frameworks, ALIA's *Foundation knowledge for entry-level library and information professionals* (2020e) is current and relevant, and provides a solid base for further developmental work.

3. There is currently no comprehensive Australian framework of knowledge, skills and ethical behaviour that represents a sector-wide, whole-of-career resource, capable of supporting the learning and development needs of all library and information professionals.

4. The current ALIA-accredited higher education and vocational education qualifications provide important pathways into the profession. Strong industry engagement and support is important to ensure that courses continue to respond to the needs of the sector.

5. There are many diverse areas of specialised practice, within and across library and information sectors, that are critical to the functioning of the sector. It is acknowledged that the different specialisations require a range of approaches to support the development of the knowledge and skills needed for professional practice.

6. There are opportunities for ALIA to work with library and information educators, employers and key stakeholders to develop new pathways into the profession at different levels. Pathways should encompass the core principles of professional identity, professional values and professional ethics, and an understanding of the wider library and information environment. Successful professional transition programs and/or credentialled pathways may provide useful models.

7. In a rapidly changing world, the imperative for continuing professional development (CPD) is widely acknowledged. Professional associations are in a strong position to encourage and support career-long learning and to formally recognise CPD as an essential component for attaining and revalidating professional status. The current ALIA CPD Scheme could be reviewed and strengthened, with consideration given to the concept of revalidation of professional status.

8. There is scope for further work to encourage active professionalism as an individual and collective attribute that is integral to all areas of practice and all interactions with others. The cultivation of active professionalism will support a whole-of-career perspective of employment in the library and information sector.

9. The challenges and opportunities that ALIA is seeking to address through this project are neither unique to one library and information sector nor to Australia. To respond to the dynamic environment and to address the challenges, a whole-of-sector approach is required. The cross-cutting and global nature of the issues provides opportunities to consult with international professional bodies to achieve common objectives.

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Appendices

Appendix 1:   ALIA *Foundation knowledge for entry-level library and information professionals*

Appendix 2:   LIANZA *Bodies of Knowledge (BOK)*

   https://read.alia.org.au/bodies-knowledge-bok (ALIA Library stable link)

Appendix 3:   CILIP *Professional Knowledge and Skills Base (PKSB)*

   https://web.archive.org/web/20220304044855/https%3A%2F%2Fwww.cilip.org.uk%2F2Fpage%2FPKSBvalue

Appendix 4:   QAA *Subject Benchmark Statement for librarianship, information, knowledge, records and archives management (undergraduate and postgraduate)*

   https://read.alia.org.au/subject-benchmark-statement-librarianship-information-knowledge-records-and-archives-management (ALIA Library stable link)

Appendix 5:   ALA *2021 update to ALA's core competencies of librarianship*

   https://read.alia.org.au/ala%E2%80%99s-core-competences-librarianship
   (ALIA Library stable link)