



Re-conceptualising and Re-positioning  
**Australian Library and Information Science Education**  
for the 21st Century

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## **Discussion Paper 3: A profile of the Australian information workforce as indicated by a job advertisements analysis**

An Australian Learning and Teaching Council Priority Project

June 2011

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## Foreword

This is the third of a series of papers exploring future directions for Australian library and information science (LIS) education. The papers are part of an Australian Learning and Teaching Council (ALTC) Priority Project being led by Professor Helen Partridge from the Queensland University of Technology (QUT). The project is being undertaken in partnership with LIS educators from eleven institutions that represent the broad spectrum and diversity of university and vocational LIS education in Australia.

The papers will provide information on the project such as preliminary findings and will be released progressively during the course of the project. They are being produced as a way of encouraging open and critical discourse and reflection on a topic that is of fundamental importance to the future of LIS education in Australia. They will also serve as an important component of the project's evaluation and information communication strategy. Your critical comments and questions are therefore encouraged and welcome.

These papers will be of interest to a number of different audiences. Within the LIS discipline they will be of interest to current professionals, employers, educators and students both in Australia and internationally. The papers will also be of interest to colleagues in other disciplines that may inevitably face the need to re-position and re-shape their approach to professional education.

Papers produced during the project will be freely available from the project website at <http://www.liseducation.org.au/resources>. If you have any questions or would like to provide comment or contribute to the project, please contact Professor Helen Partridge at [h.partridge@qut.edu.au](mailto:h.partridge@qut.edu.au).

This paper outlines preliminary findings from the Workforce Planning Sub-Study Team. Team members include Maureen Henninger, Dr Kerry Tanner, Dr Sue Reynolds and Associate Professor Paul Genoni. The team also acknowledges the contribution of Research Assistant Sharyn Wise.

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## Introduction

This discussion paper gives an overview of the Workforce planning sub-study, one of three sub-studies of the national project, *Re-conceptualising and re-positioning Australian Library and information science education for the 21<sup>st</sup> century*, which has been funded by the Australian Learning and Teaching Council (ALTC). This ALTC priority project recognises that there are three major and equal stakeholders in the education process — students, educators and employers. The Workforce Planning sub-study examines the current work environment from the perspectives of employees and employers and attempts to identify the potential employers of Library and Information Science (LIS) graduates. While the ‘workforce’ consists of the graduates of library and information science education programs, it is the marketplace (the employers, both actual and potential) for these graduate information professionals which is the major stakeholder. The understanding of this marketplace and its knowledge and skill requirements is imperative to the delivery of relevant and successful library and information science education.

While the acronym LIS stands for library and information science, for this study we have adopted the scope of the discipline as the study of the gathering, organising, storing, retrieving, evaluation and dissemination of information as well as the design and delivery of information services to meet client or community needs. The workforce sub-study considerations include

- what is the nature and composition of the LIS industry in the 21st century in Australia?
- how do the subfields of study and practice (e.g. records management) relate to each other?
- what are the number and types of LIS positions currently available in the sector?
- what are employers’ expectations of workforce skills and knowledge (including the anticipated positions and the associated skills and knowledge required for the future by new graduates and experienced professionals)?
- what are the gaps between employer expectations and needs, and the skills and knowledge of graduates coming out of current LIS education programs in Australia?
- which organisations are employing LIS graduates?

While there are many aspects of this sub-study and several methods of data collection, this discussion paper uses one of the data collection methods, a job advertisements analysis, to present a general overview of the information professions — their converging nature, and their changing roles and employment sectors.

## Research aims

One of the complexities of this study is to define the information professions; indeed it is hoped that one of the outputs of this study is to contribute to and inform such a definition. Specifically the sub-study was designed with four aims:

1. to critically review how the ‘convergence’ of the information professions has and will impact upon their practices and disciplinary knowledge.
2. to ascertain the current employers and potential employers of LIS graduates
3. to critically analyse the generic, disciplinary and professional skills required in workforce planning for the information professional sector

4. to critically review the levels of qualifications required in the information sector marketplace.

Because of the complexity and uncertainty inherent in these research aims, particularly in ascertaining the potential employers of LIS graduates, several methods of data collection were designed (Table 1). Analyses of this data will provide insights into the following key questions and issues:

- what evidence is there for professional and/or disciplinary convergence in the jobs advertisements collected?
- who might employ information professionals based on what we currently know about the information professionals skill-set?
- is there evidence of demand for the skills identified in the literature?
- what other skills might be being sought by potential employers of information professionals?
- what qualifications are required?

**Table 1 Study themes, research aims and strategies and data collection methods**

	Convergence	Employers	Skills	Qualifications
Environmental scan				
• Literature review	✓	✓	✓	✓
• Analysis of patterns in available statistical data		✓		
• Skills matrix			✓	
Analysis of job advertisements	✓	✓	✓	✓
Online survey	✓	✓	✓	✓
Individual interviews	✓	✓	✓	✓

## Job advertisement content analysis

All four study themes will be informed by the content analysis of job advertisements and it is this data collection method on which this discussion paper is concentrating. This is an established methodology in the discipline, with the last decade alone providing Australian and New Zealand examples including Ralph and Sibthorpe (2009), Kennan et al. (2006a, 2006b, 2006c), Marion et al. (2005), Pember (2003) and international examples including Reeves and Hahn (2010), Hall and Abell (2006a, 2006b), Choi and Rasmussen (2009), Fisher (2004) and Clyde (2002). More specifically, earlier job content analyses have been used to address the four themes of this study as follows:

**Convergence:** A number of studies using job advertisements analysis have provided evidence of various aspects of convergence: — of disciplines (Andrew & Ellis, 2005; Pember 2003; GKIMN, 2009; Broady-Preston, 2009, 2010), of roles (Abell et al., 2006; Kennan et al. 2006a, 2006b; Hall & Abell, 2006b; Broady-Preston, 2009), and of professions (Hall & Abell, 2006b; Goetsch, 2005; Corral, 2010).

**Employers:** Most of the job analysis studies point to the ‘traditional’ employment options in all types of libraries however academic libraries in particular are employing more non-LIS graduates (Genoni & Lodge 2008), although the WILLIS 1 study noted that 79% of graduates working in libraries were using their LIS skills (Marshall et al., 2009). While there have been some reported findings in emergent markets or ‘other information work’ (Genoni et al., 2000; Genoni & Smith, 2005; Marshall et al., 2009), it has been pointed out that “just about any organization in the information age needs people to shape, retrieve, and manage its information” (Gordon, 2009).

**Qualifications:** Many of the job advertisements analyses examine the qualification requirements and changing trends in qualification requirements for information management employment have been evidenced through longitudinal analysis of LIS/IM/recordkeeping job advertisements (Kennan et al. 2006a, 2006b; Myburgh 2003; Pember 2003).

**Skills:** Kennan et al. (2006c, p. 22) note that one of two core strands of the literature on LIS workforce roles and skills, is workforce side studies, which produce information from the field. These include analysis of job advertisements since they act as the “relatively accessible indicators of the knowledge, skills and competencies required...by employers” (Kennan et al., 2006b, p. 179). Many such studies have been done in recent years in Australia, the U.K. and the U.S. (Myburgh, 2003; MacPherson, 2008; Andrews & Ellis, 2005; Gutsche, 2010; Reeves & Hahn, 2010; and Marion, 2005).

## Data collection

In order to collect a representative sample, two sampling periods were chosen. Firstly 286 job advertisements were collected during a two week period over February/March 2010 when graduates would be coming into the market following summer vacation. Then 181 further job advertisements were collected during a one week period in early-mid June, a period when hiring typically increases due to the need to ‘spend it or lose it’ before the imminent end of financial year. This produced a total of 467 advertisements after de-duplication. There were three sources of job advertisements — the ALIA jobs board, *Seek* and *MyCareer*. *Seek* was selected as it is the market-leading job board in Australia according to Nielsen / Netratings, Market Intelligence (Seek, 2010).

Data was first loaded into Provalis Research’s QDA Miner for cleansing, coding of variables (such as industry, qualifications and location information) and exported again as clean HTML pages. QDA Miner was also used for manual content analysis, quantitative analysis of keywords and cross-validation of Leximancer analysis.

## Overview of findings

Some of the general findings from the analysis of job advertisements raise several discussion points about the information professions in Australia, the roles information professionals have, employers, skills, qualifications, and some general remarks about job trends.

### The information professions

One of the vexing questions which challenges education providers for the information professional workplace is ‘what is the information profession?’ While there is no agreed definition of a profession, it is generally agreed that a profession has a body of specialised knowledge and skills, theory-driven research, a high level of education, professional preparation and review, a code of ethics, and professional identification and practice control (Emener & Cottone, 1989, p. 577; Professions Australia, 1997).

LIS has traditionally included libraries, records management, archives, and teacher librarianship. In recent years there has been an expansion of the information profession to be more broadly defined as information management and to include knowledge management. The literature shows an increasing range and diversity of employment opportunities within the information field from the late 1908s. Although a majority of LIS graduates still go into library positions, an increasing proportion of graduates is taking up newer information roles, or revamped roles in traditional contexts. An LIS qualification provides important generic skills that can be readily adapted to non-traditional environments. There is now greater emphasis on “educating graduates to work in broader information environments and to consider new career paths in non-traditional agencies and organisations” (Yu and Davis, 2007).

As already noted, this study defines library and information science (LIS) as the gathering, organizing, storing, retrieving, evaluation and dissemination of information as well as the design and delivery of information services to meet client or community needs. We have used ANZSCO the Australian Bureau of Statistics’ Classification of Occupations group ‘Information and Organisation Professionals (ABS, 2006) which states “information and organisation professionals support organisations, government, individuals and the community by analysing, organising and managing information and data, and by providing advice on policy, business and organisational methods”, but we have excluded economists, land valuers, actuaries, statisticians and mathematicians. Based on ANZSCO, the tasks of an information professional include:

- developing, organising and maintaining libraries and other information keeping services
- managing the collection and processing of information and data to produce intelligence, and analysing and advising on policy options
- studying organisational structures and methods to solve organisational problems and achieve greater efficiency (ABS, 2006, p. 180).

One way of looking at the extent of the information professions is to examine the clusters of advertised jobs. The initial concept map (Figure 1) developed in our study shows, not surprisingly, that clusters of jobs began to emerge around the library theme, engaging service support, information management and collection management concepts. The library assistant theme is less closely related to these concepts (an outlier) and library science is also an outlier related to the library and library assistant themes. Other clusters emerged around the records management and Internet themes, unified by a central generic ICT skills theme. The information architecture theme emerged as an outlier of the Internet theme. Not surprisingly, communications skills form a significant cluster.



information brokers, and consultants” (SLA, 2010). Although a majority of LIS graduates still go into library positions, an increasing proportion of graduates is taking up newer information roles, or revamped roles in traditional contexts. An LIS qualification provides important generic skills that can be readily adapted to non-traditional environments. There is now greater emphasis on “educating graduates to work in broader information environments and to consider new career paths in non-traditional agencies and organizations” (Yu & Davis, 2007).

Graduate destination studies give a window to information professional roles. Genoni and Smith (2005) identified from 2002 data that nearly one third of graduates went into non-librarianship roles: — records management, archives, computing and information systems and ‘other’ information work. Many researchers note that web-based information roles are within the ambit of information professionals (Ashcroft, 2004; Pedley, 2001; Reeves & Hahn, 2010; Hall & Abell, 2006; Choi & Rasmussen, 2009; Gutsche, 2009; Stephens & Hamblin, 2006; Fisher, 2004).

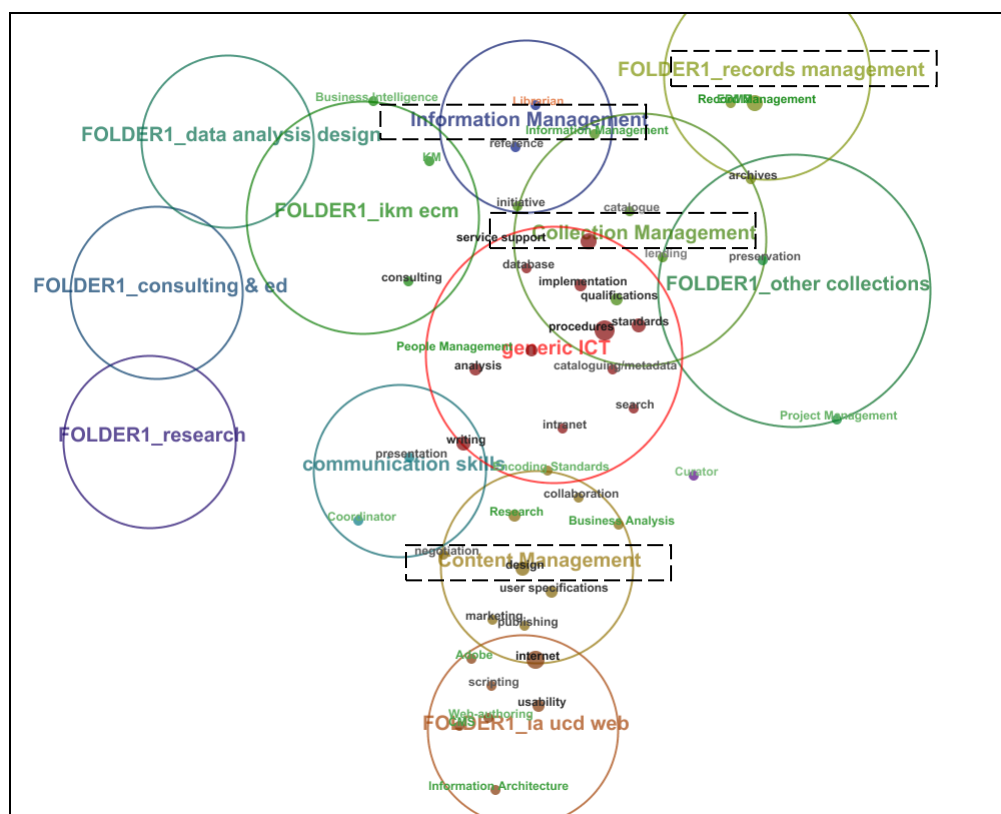
Myburgh (2003) undertook a five year longitudinal study based on job advertisements for information professionals and found that traditional roles were “becoming less frequent in the array of careers now open to information professionals, and an assortment of different competencies, skills and graduate qualities is required to suit such opportunities” (Myburgh 2003, p.1). Myburgh found that the most highly ranked characteristics were not traditional ‘core’ library skills but broader information management skills including understanding the interplay between information and business needs of large companies; technological expertise; user analysis for digital media; applying legislation and governance requirements, and information design, including classification (Myburgh 2003, p.4).

The studies of Hall and Abell (2006) and Abell et al. (2006) are also highly relevant. They researched emerging ‘e-information roles’ in the U.K. using a combined methodology of job advertisement analysis, survey, focus groups and interviews. “E-information roles are defined as roles that are (1) directly related to the creation, use and management of electronic information, and (2) comprise at least 50% information management or knowledge management in their responsibility” (Hall & Abell, 2006a, p.1), a definition employed in this job advertisement content analysis. They note that “this definition thus excludes ‘pure’ IT roles’ and business roles ‘which are not primarily concerned with information management or knowledge management” (Hall & Abell, 2006b, p.2). The research “established that there is an ‘e-information’ job market” (Hall and Abell, 2006b, p.12), albeit diffuse, and they were able to conclude that “employers do value information skills. In fact the respondents to the e-information roles survey suggested that, for these roles, some employers valued core information management skills above business and computing skills.” (Abell et al., 2006, p.250).

## **Job categories**

The current study examined the various job categories listed in the job advertisements with the ‘traditional’ LIS categories totalling 56% of all positions advertised (libraries, 37%; records management, 19%). However to begin to untangle the non-traditional jobs, ‘library jobs’ were removed from the dataset; this resulted in a concept map showing job categorisation (Figure 2). In this figure the notion of management becomes apparent with the centrality of Collection Management ‘surrounded’ by Information Management, Content Management and Records Management.

**Figure 2 Concept map of non-library-based job data showing categorisation** (size of circles is unrelated to number of jobs in each folder)



**Discussion point**  
**Outside of specific library jobs, is there a trend toward notion of the converged role of managing collections, whether content, records, archives or library holdings?**

Finally, the number of jobs across the entire dataset, library job advertisements included, is shown in Table 2 below. It is interesting to note that Web content and production, including information architecture and user-centred design represents 23% of all job advertisements, while the ‘traditional’ job categories of libraries is 37% and records management is 19%. A large proportion of jobs (46%) for information professionals are in ‘non-traditional’ environments, i.e. jobs not specifically in libraries or records management.

**Table 2 Number of job advertisements for each job category**

Job category	Sub-category	Count
Library (sub-categorised as in Hallam, 2008)	Public (local)	54
	University (academic)	42
	Special	39
	School	26
	NSLA (National & State Libraries and Archives)	7
	VET	4
	<b>Sub total</b>	<b>172</b>
Web content and production, including information architecture (IA) and user-centred design (UCD)		107
Records management		89
Information & knowledge management (IKM), including enterprise content management (ECM)		58
Data analysis design		14
Other collecting institutions		12
Consulting & education		8
Research		7
<b>TOTAL</b>		<b>467</b>

The large number of jobs in the category Web content and production, including information architecture (IA) and user-centred design indicates an area for further analysis. This will be done with all data collected for the study, and in particular in the study's third aim concerning skills. It is likely that what the SLA (2010) describes as 'web developers' is focused around information design and organisation, in a way more similar to ANZSCO's definition of a 'web designer', who "plans, designs, develops and prepares information for Internet publication with particular emphasis on the user interface, ease of navigation and location of information using text, pictures, animation, sound, colours, layout and data source to deliver information tailored to an intended audience and purpose" (ABS, 2006).

### **Discussion point**

**Should the information professions be claiming Web content and production?**

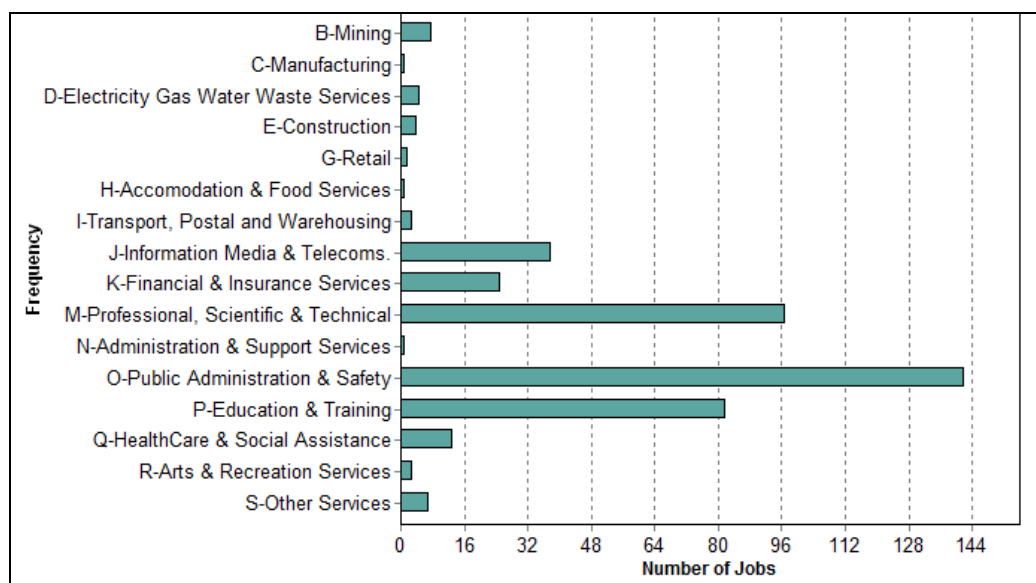
### **Employers and employment destinations**

ALIA's list of potential employers for its members includes mainly traditional employers of LIS graduates; these are overwhelmingly within the library sector (ALIA, 2010). However, changing trends in employment destination of LIS graduates over several decades are continuing, with an increasing range and diversity of employers. Information schools' names and foci reflect the diversity of employment destinations — information management, information and knowledge management, and information systems.

With a mandate to find current and *future potential* employers of LIS graduates, the intention of job advertisement analysis in this study was to cast a wide net, well beyond the traditional library sector to *non-traditional employers of graduates* in the information professions. It would appear that an LIS qualification is providing important generic skills that are readily adapted to non-traditional contexts, for example those which are noted by the Special Libraries Association (SLA) "some commonly used names for (Information) organizations include libraries, information centers, competitive intelligence units, intranet departments, knowledge resource centers, content management organizations, and others" (Abels et al. 2003, p.1). Another intention of this study was to include roles that could reasonably be attained by LIS/IM graduates some years out from graduation, in mid-career.

Where the employer was known, jobs were classified according to the 2006 Australian and New Zealand Standard Industrial Classification (ANZSIC) sectors (ABS, 2006a). Our study shows overwhelmingly that the jobs are in public administration sector (reflecting public libraries, public records), the education and training sector (academic, school and community libraries), the professional, scientific and technical sector (special libraries), and the information media and telecommunications sector (publishing, online media organisations) (see Figure 3 below).

**Figure 3 Frequency distribution of jobs by ANZSIC industry division**



## Skills

In general, it would appear the all practice domains want skills in communication and generic IT usage. Libraries in particular want personal characteristics e.g. adaptability (71%), initiative (59%), organisational skills (54%) and negotiation skills (45%).

An interesting point that will be examined in more detail in further analyses is the trend in Web skills which are required across all types of libraries. However it appears that most jobs seek familiarity with Web applications, whereas Web development skills are waning (14%). There appears to be an emerging growth area in Web 2.0 skills requirements (9%).

## Qualifications

There has been much discussion in the literature about information professional qualifications, accreditation by and membership in professional bodies (Broady-Preston, 2009; Hallam, 2008; Kennan et al 2006a, 2006b; Pember 2003). Our study shows that almost 90% of all jobs did not require any membership of or eligibility for membership of a professional organisation, see Table 3 below. For library job advertisements overall, only 29.65% requested *eligibility* for membership (whether at associate level or not), while only 24.4% of library job advertisements explicitly requested ALIA membership.

This study posed questions about the qualifications required to attain jobs in the information professions and the role of professional bodies. These were of interest because of the role they play in defining IM as both a discipline and a profession.

“Vital to the establishment of market dominance by professional groups are a variety of factors, including the work of professional bodies or societies who reinforce the demarcation of professional spheres of influence, jurisdiction and the formalisation of knowledge. This latter area of power through control over access to education, a formalised knowledge base, the accreditation of education and training qualifications and/or providers has a profound impact on both the collective profession and the individual professional” (Broady-Preston 2009, p.69).

This formalised knowledge base, or Body of Professional Knowledge (BPK), should be unique, a fact that already raises problems for information management: “if the IP [information professional] no longer possesses a unique set of skills and knowledge, a view argued recently by Feather (2009), then it is also pertinent to enquire to what extent we may legitimately continue to categorise ourselves as the information ‘profession’”. (Broady-Preston

2009, p.71) It is all the more important then that the professional associations continuously reconceptualise the BPK at the heart of IP practice, as *The Bookend Scenarios* proposes, contending that “Aggregation of the professional bodies is essential – perhaps reinvention of the profession is what is really needed?” (State Library of NSW, 2009, p.13).

**Table 3 Qualifications requirements by job category outside of libraries**

	None	max qual (Cert II)	Certificate	Diploma	Bachelors	Post Graduate	Tertiary qualification, not specified	TOTAL	% requiring qualification
Records management	65		6		5		13	89	26.97%
Web content, IA, UCD	86			1	11		9	107	19.63%
IKM ECM	38				13		7	58	34.48%
Data analysis design	11				2		1	14	21.43%
Consulting & education	8							8	0.00%
Research	4				2		1	7	42.86%
<b>TOTAL</b>	<b>212</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>33</b>	<b>0</b>	<b>31</b>	<b>283</b>	<b>25.09%</b>

**Table 4 Membership of professional associations**

	none	ALIA Assoc.	ALIA unspec.	ASA	FOI	RMAA (desirable)	TOTAL	membership required %
Library - VET	2		2				4	50.00%
Library - special	27	2	10				39	30.77%
Library - school	23		3				26	11.54%
Library - NSLA	6		1				7	14.29%
Library - local	35	7	12				54	35.19%
Library - academic	35	4	3				42	16.67%
Records management	87				1	1	89	2.25%
Other collecting institutions	11			1			12	8.33%
<b>TOTAL</b>	<b>420</b>	<b>13</b>	<b>31</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>467</b>	<b>10.06%</b>

The data contrasts with Pember’s findings (Pember 2003, p.194) that 10% of record keeping jobs required membership of a professional organisation, showing a decline to 2.25%.

In libraries, the Nexus2 paper reported that “The majority of respondents (80%) indicated that ‘eligibility for Associate membership of ALIA’ was required. NSLA reported the lowest response (60%). However, a small number of respondents (13%) felt that the situation could change in the future, as the skill set that was sought by employers was moving beyond the ALIA education standards, or indeed that the standards themselves were not high enough.” (Hallam 2008, p.72-27).

This *could* indicate that the move away from ALIA requirements noted in the Nexus2 report has gained pace. However it is interesting to note that Sanders was puzzled by a similar discrepancy between strong anecdotal support for a preference for ALIA accredited qualifications and the (then) recent findings of Kennan et al. that by 2004 only 32.5% required ALIA accreditation as a requirement, down from 74.2% in 1974 (Sanders 2008, p.110-111). These discrepancies may suggest a reason other than a simple decline in support for ALIA accreditation. For example, perhaps employers omit the requirement of eligibility for ALIA accreditation from job advertisements to increase the applicant pool, while expecting membership to be attained later through the ALIA’s Widened Eligibility provisions (ALIA, 2010c).

**Discussion point**

**Does it matter that employers appear to place little importance on membership of professional associations?**

## Further analysis

This discussion paper has concentrated on one of the several data collection methods, job advertisements analysis, and has provided some general findings, particularly with reference to previous studies in the library and information science literature. The results from the other data collected (the graduate online survey, the interviews with recruiting agents and with employers) have yet to be analysed. Once this has been done, some of the issues that have been raised and/or alluded to in this discussion paper will be examined in depth and in doing so, the Workforce Sub-study will be able to draw some conclusions about the information professions' workforce requirements. We then will be in a position to add this to the overall study in order to make recommendations for the re-conceptualising of Australian LIS education for the 21<sup>st</sup> century.

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