



What if? Exploring alternative models for professional LIS education

Brenda Chawner & Gillian Oliver

To cite this article: Brenda Chawner & Gillian Oliver (2016) What if? Exploring alternative models for professional LIS education, The Australian Library Journal, 65:4, 304-316, DOI: [10.1080/00049670.2016.1238433](https://doi.org/10.1080/00049670.2016.1238433)

To link to this article: <https://doi.org/10.1080/00049670.2016.1238433>



Published online: 02 Oct 2016.



Submit your article to this journal [↗](#)



Article views: 1361



View related articles [↗](#)



View Crossmark data [↗](#)

RESEARCH ARTICLE

What if? Exploring alternative models for professional LIS education*

Brenda Chawner and Gillian Oliver

School of Information Management, Victoria University of Wellington, Wellington, New Zealand

ABSTRACT

This article aims to stimulate discussion about whether the current structure of postgraduate library education, largely unchanged for over 60 years, is still the best option, given the ways in which professional library positions increasingly require specialised knowledge and skills. Comparative cases from selected New Zealand professions, including medicine, law, teaching and accounting, are used to identify common characteristics of practice-based professional education, including education for specialisations which typically follow the basic degree. The article suggests that trends affecting library work create an opportunity to consider alternative models, including undergraduate education and advanced specialised qualifications.

KEYWORDS

Library education; trends; professional practice; New Zealand

Introduction

In his 2010 book *The MLS Project: An Assessment After Sixty Years*, Swigger examined whether the American Library Association's (ALA) 1947 decision to make a Master's degree the preferred qualification for professional positions in North American libraries achieved its goals. His conclusion was that overall it has failed to do so. This article builds on his findings in order to stimulate further discussion of options for improving the structure of professional library qualifications. Specifically, the question underlying this paper is whether the current structure of postgraduate library education, which has been largely unchanged for over 60 years, is still the best option, given the ways in which professional positions increasingly require specialised knowledge and skills. The paper uses comparative cases from other professions, including medicine, law and education, to identify common characteristics of practice-based professional education, including more specialised qualifications, which typically follow a basic degree.

Librarianship as a profession

The topic of professionalism has been debated in library literature for over a century. Melville Dewey had no doubts that librarianship was a profession in 1876, saying 'The time has

CONTACT Brenda Chawner  brenda.chawner@vuw.ac.nz

*This paper has been double-blind peer reviewed to meet the Department of Higher Education's Higher Education Research Data Collection (HERDC) requirements.

at last come when a librarian may, without assumption, speak of his occupation as a profession' (Dewey, 1876, p. 5). However, despite the confidence of Dewey's statement, the topic of whether or not librarianship is a profession, and what needs to be done to improve its status, has been the subject of many articles and books. Hicks (2014) noted that this literature focuses on 'the professional image, status, and reputation of librarianship', concluding that 'librarians are concerned with their professional reputation' (p. 253).

Most of the occupations considered to be professions require their practitioners to hold formal qualifications, with educational providers of recognised qualifications normally required to meet specified criteria in terms of the programme content, length and qualifications of the educators, in order to be accepted by the profession's governing body. Librarianship is no different. Since the early 1950s, the main professional qualification for American librarians has been a Master's degree offered by an accredited library school. Although some countries, such as Australia, New Zealand and the United Kingdom, also consider undergraduate degrees in library and information studies (LIS) to be acceptable for professional positions, the North American model is the focus of the current paper, since it is so widespread and influential.

The foundation of this approach can be traced back to Williamson's (1923) report *Training for library service*, prepared for the Carnegie Corporation of New York. Williamson's brief was to 'improve ... the situation' relating to library training, following a 1917 report by Alvin Johnson that criticised the skills of library staff (Shera, 1971, p. 237). Williamson conducted a field study that involved visits to all U.S. library schools, his report identifying a number of weaknesses with the education that was provided. These included varying admission standards, inadequate fieldwork and poor quality facilities. Williamson identified two types of library work for which qualifications were needed: a professional level, requiring a broad general education followed by a year of postgraduate study, and a sub-professional or clerical level, for which he felt post-secondary study was appropriate (1923, p. 4). His recommendations for the professional qualification included the standardisation of entry requirements to require a four-year bachelor's degree, affiliating graduate library schools with a university (rather than with a public library, which was then sometimes the case), providing one year of general education followed by a year's specialisation, and including a year of practical experience as part of the library-oriented degree.

Williamson assumed that every librarian needed 'some knowledge of foreign languages and literature, history, sociology, economics, government, psychology, and the natural sciences' (p. 6), and concluded that a bachelor's degree was the best way for library professionals to gain this knowledge. He also considered one year of postgraduate study adequate for someone to gain the knowledge required to manage a library. While this may have been true in 1923, the nature of library and information work has changed considerably in the past 90 years, as shown by the growth in professional and academic literature in the field.

Although Williamson's recommendations were clear, they did not resolve the debate about the best structure for professional library education. The Public Library Inquiry, conducted in 1948–1949 by the Social Science Research Council under the direction of American political scientist Robert Leigh, found that only 5 of 26 library studies programmes offered a two-year Master's qualification, while 13 offered a year's study as part of a four-year bachelor's degree and 23 a one-year bachelor of library studies degree completed after a four-year bachelor's degree in another subject, referred to as a five-year bachelor's degree (Swigger, 2010, p. 13). Swigger notes that library professionals were concerned that the five-year

degree, which was the most common, made the profession less attractive to prospective students. Following considerable discussion of a range of options, which included expanding undergraduate library education, in the early 1950s the ALA Board of Education decided to 'limit ALA accreditation to master's degree programs' (Swigger, 2010, p. 2). This was in part based on the continued assumption that librarians need to have a broad educational background before undertaking professional education, but the decision was also intended to raise the status of library professionals, attract better students and raise salaries. Based on data from a range of sources, Swigger concluded that what he termed 'the MLIS project' had limited success, and overall failed to achieve its goals (2010, p. 3). He also suggested that it is time to consider other models of professional education, including recognising bachelor's degrees.

Changing landscapes

The topics covered in professional LIS education have not been static since the ALA decision to recognise only Master's level qualifications. In her study of changes in LIS school curricula, Bronstein (2007, 2009) found that although most programmes in her sample had a strong focus on information content, they also covered information technology, user behaviour and a range of professional practices, including the organisation of information. She noted that there was relatively light coverage of planning and strategy, which led her to conclude that most of the programmes she examined were designed to prepare their graduates for entry-level positions.

Other aspects of LIS education have changed as well, including the way programmes describe their focus and their relationships with each other. From the late 1990s, a number of programmes began to refer to themselves as iSchools (or Schools of Information) as a way of indicating that they took an interdisciplinary approach to studying information, organisations and technology, rather than focusing only on libraries. Dillon (2012) suggests that iSchools place more emphasis on human interaction with information enabled by technology, and contrasts this with more traditional LIS schools, which generally focus on information use in specific contexts such as libraries and archives. This grouping was formalised in 2005 with the formation of the iCaucus (Jank, Chu, & Koenig, 2013). By mid 2015, the iCaucus had 65 members (<http://ischools.org/members/directory/>), primarily located in the United States, but with some iSchools located in Canada, Europe, the United Kingdom and Asia. A separate group, the Consortium of iSchools Asia Pacific (CiSAP) was established in 2008. CiSAP currently has 24 members, located in Australia, China, India, Japan, Korea, Malaysia, New Zealand, Pakistan, Singapore, Taiwan and Thailand. Chu's (2012) comparison of the curricula of five iSchools and five LIS schools showed that there was little difference between the groups, though iSchools generally offered more electives while LIS schools offered more specialisations. This suggests that the primary focus of the iCaucus is research collaboration rather than teaching innovation; CiSAP appears to be similar, since each group holds annual conferences that serve to strengthen information-related research relationships.

In contrast, the WISE (Web-based Information Science Education) Consortium (<http://www.wiseeducation.org/>) was founded in 2004 to allow its members to share elective courses with one other. Students enrolled in a WISE member's programme are able to enrol in web-based electives offered by another institution, if places are available. This allows WISE

members to extend their programme offerings, particularly for low-demand or specialist topics.

Curriculum content

Many studies have examined coverage of specific topics in LIS Master's degree programmes. These include management (Mackenzie & Smith, 2009), information technology (Singh & Mehra, 2013), cataloguing (King, 2012; Miller, Lee, Olson, & Smiraglia, 2012; Moulaison, 2012), information organisation (Joudrey & McGinnis, 2014) leadership (Hicks & Given, 2013; Phillips, 2014), expert searching (Smith & Roseberry, 2013), social justice and diversity (Bonnici, Maatta, Wells, Brodsky, & Meadows, 2012; Mehra, Olson, & Ahmad, 2011), assessment (Askew & Theodore-Shusta, 2014), intelligence analysis (Jin & Bouthillier, 2012), financial management (Burger, Kaufman, & Atkinson, 2015) and technical services (Albee, 2015). In most cases, the authors suggest that curricula need to be modified to include more coverage of the topics examined.

In addition, the extent to which specific types of library work is covered in curricula has also been investigated, including school librarianship (Yi & Turner, 2014), academic librarianship (Bailey, 2010), science librarianship (DeArmond et al., 2009; Murphy, 2008), data curation (Harris-Pierce & Liu, 2012) and digital library management (Pomerantz, Wildemuth, & Oh, 2006). Again, the authors of these studies generally suggest extending coverage of these specialisations.

At the same time, collaboration and convergence between the traditionally siloed institutions of the information landscape (libraries, archives, museums and galleries) are leading to considerations of new curricula for a new breed of information professional (Howard, 2015). Digital technologies facilitate new ways of creating, accessing, using and reusing information, challenging the relevance of a landscape characterised by professions associated with a particular type of institution. One of the ways in which LIS programmes have responded to the increasing complexity of the information environment is the development of new specialisations, and in some cases, the establishment of related qualifications. These include digital stewardship (Mahard & Harvey, 2013), museum informatics (Marty & Twidale, 2011), health informatics (Goldberg, 2012) and data curation (Goldberg, 2012).

Changes in library work

Another factor that affects the nature of library education is the ways in which library work is changing. Mullins (2012) identified a range of newly created or emerging roles in academic libraries, based on a focus group of Association of Research Libraries (ARL) directors. These roles included roles related to managing digital archives, providing research support services, data management, gaming, and supporting teaching and learning (Mullins, 2012, p. 129). Interviewees were also asked whether they felt that applicants holding an MLIS degree were adequately prepared for this type of position; while some responded positively, many said that this was not the case. This finding is supported by Vassilakaki and Moniarou-Papaconstantinou's (2015) systematic review of 114 papers published between 2000 and 2014, which identified new roles in academic libraries relating to teaching, information technology, consulting, subject support and knowledge management.

New roles are not found exclusively in academic libraries. Public libraries are also beginning to provide innovative services, such as makerspaces, which require librarians to have skills in programme development and grant writing, in combination with an interest in learning to use a range of technologies (Koh & Abbas, 2015). Special librarians are becoming involved in analysis, competitive intelligence, intranet management and knowledge management (Murray, 2014). Medical librarians are taking on roles relating to data management, preparing systematic reviews, assisting with publication and tracking research impact (Crum & Cooper, 2013). D'Souza suggests that there will soon be a need for 'community-led' librarian positions, where much of the work is done outside the traditional library (2015, p. 28). He notes that these types of positions will require graduates to have a very different set of skills from more traditional positions, including soft skills such as relationship-building.

Several research projects examining the skills that should be included in information education have been undertaken recently. One, funded by the University of Maryland's Information Policy & Access Center (iPAC), used multiple methods, including interviews with employers and key informants, to identify the core skills and knowledge that managers sought in new employees (Bertot & Sarin, 2015). This information was used to identify nine broad content areas for a 're-envisioned' MLS curriculum:

- Technology (current, emerging, and concepts)
- Digital asset management (ability to create, store and access digital assets)
- Data (Big, local and personal)
- Assessment and evaluation (planning, analysis, impact)
- Policy
- Cultural competence
- Information needs
- Making
- Change

In the next year, the University of Maryland iSchool expects to begin the process of redeveloping their MLIS to incorporate these topics. The report briefly discussed situations where employers considered alternative qualifications for positions requiring specific technical or communication skills, such as information technology, web development or human resources. One point they make is that participants considered a Master's level qualification necessary 'for leadership positions in libraries', which raises the question of whether it is necessary for entry-level positions.

A second project, titled 'Educate to Innovate: Re-visioning Library and Information Science Education', was funded by the Institute for Museum and Library Services (IMLS). Led by Eileen G. Abels, Simmons College School of Library and Information Science (Boston), in collaboration with Linda C. Smith, University of Illinois at Urbana-Champaign's Graduate School of Library and Information Science, and Lynne C. Howarth, Faculty of Information at the University of Toronto, the project involved a three-day workshop attended by academic staff and senior library managers from a range of institutions, complemented by representatives from related industries, such as web publishing and communications. The results of the conference are due to be published as a white paper, which was not available when this article was written.

Alternative models

While these initiatives are encouraging and suggest that much-needed changes to the content of library-related Master's qualifications will be made in the next few years, given the disruptive nature of many of the changes and trends discussed above, we find it difficult to see how a single model for professional education can continue to be effective. In particular, the preceding discussion has focused primarily on qualifications preparing people for entry-level positions in library and information work.

There has been little discussion of the need for advanced qualifications in specialised topics, with most articles about the need for librarians to develop their professional knowledge and skills suggesting that continuing professional development (CPD) is the solution. This is exemplified in the American Library Association's Strategic Plan (2010–2015, <http://www.ala.org/aboutala/strategicplan>) which includes Education and Lifelong Learning as the third of its seven key action areas. Blakiston (2011) commented that 'librarians of any specialty require continual training and development in order to be effective in their shifting roles'. She then identified a number of options for self-directed informal learning, such as joining relevant email discussion lists, attending conferences and web-based seminars, and reading blogs. While these are all excellent suggestions, they may not provide a coherent learning experience, as the quality of information provided, and the associated learning opportunities, may vary considerably. Some New Zealand library managers holding a basic LIS qualification have chosen to undertake further formal study in another area, such as public policy, information systems or information technology management. One of the reasons they have done so is that no advanced qualifications designed specifically for library managers are currently available. This situation leads to two questions.

- (1) Is a single qualification, occasionally with specialisations, the best preparation for a career in a rapidly changing environment? If not, what other alternatives might be better?
- (2) How can LIS educators best reflect changing industry practice in their programmes?

In order to identify alternative models, we investigated the educational requirements for selected professions in New Zealand, presented in Table 1. We also examined the extent to which teaching staff included practitioners as well as academics, presented in Table 2.

Comparing the current approach to professional LIS education in New Zealand to other examples in Table 1 shows that the requirements are one of the lowest in terms of the length of specialist study required. MIS graduates complete 10 courses plus a research project, which is the equivalent of three terms of full-time study, while an ILS major requires 10 courses, plus optional electives, which may be in another subject. New Zealand librarianship also has relatively light CPD requirements, while countries which do not have an individual registration scheme for librarians, such as Canada and the United States, have no formal requirements for professionals to undertake any CPD. Since there is no legislative or regulatory requirement for people holding professional positions in a library to hold any specified qualification, or certificate of practice, LIANZA's voluntary registration scheme has had little impact on employers since its establishment in 2007. By 2015, only one major employer, Auckland Libraries, required staff in management roles to be registered, though others sometimes indicate registration is preferred when advertising vacancies.

Table 1. Selected New Zealand professional qualifications/requirements.

Profession/ trade	Certifying organisation	Initial qualification	Certification requirements
Medical doctor	Medical Council of New Zealand	M.D or equivalent from a university medical school listed in the World Directory of Medical Schools	Annual renewal of practicing certificate, subject to CPD requirements
Medical specialist, such as Dermatologist, General surgeon, Diagnostic radiologist, Obstetrician and Gynaecologist	Medical Council of New Zealand	M.D. plus additional vocational training as specified by the Medical Council for the specialisation, usually undertaken overseas	As above
Nurse	Nursing Council of New Zealand	Bachelor's degree in Nursing or equivalent	Annual renewal of practicing certificate, subject to provision of declaration about meeting continuing competencies requirement
Dentist	Dental Council of New Zealand	Bachelor's degree in Dental surgery or equivalent	Annual renewal of practicing certificate, subject to satisfaction that practitioner has maintained competence and fitness to practice
Pharmacist	Pharmacy Council of New Zealand	Bachelor's degree in Pharmacy	Annual renewal of practicing certificate requires 150 h of practice each year plus completion of compulsory CDP programme
Pharmacist prescriber	Pharmacy Council of New Zealand	Bachelor's degree in Pharmacy plus Postgraduate Certificate in Clinical Pharmacy or Pharmacist Prescribing	As above
Lawyer	New Zealand Law Society	Bachelor's degree (LLB) plus completion of professional legal studies course	Must provide certificate of character prior to initial certification. Annual renewal of practicing certificate, subject to provision of declaration of fitness to practice
Teacher (Early childhood or Primary)	Education Council of Aotearoa New Zealand	Bachelor of Teaching, Diploma of Teaching, or equivalent qualification approved for registration by the Education Council of Aotearoa New Zealand. Specialisations include Early Childhood Education, Primary, Pasifika Primary, Montessori Primary, Steiner Primary, Māori Medium	Provisional registration for between two and six years, followed by full registration lasting three years. Renewal of practicing certificate requires satisfactory CPD, recent teaching experience, and assessment against Registered Teacher Criteria
Teacher (Secondary)	Education Council of Aotearoa New Zealand	Subject-based Bachelor's degree followed by a Graduate Diploma of Teaching, Bachelor of Physical Education (Secondary), Bachelor of Education (Technology), Conjoint Bachelor of Teaching (taken at the same time as a subject-based Bachelor's degree), or Master of Teaching and Learning (Secondary)	See above

(Continued)

Table 1. (Continued).

Profession/ trade	Certifying organisation	Initial qualification	Certification requirements
Social worker	Social Workers Registration Board	Bachelor's degree in Social Work, Social Sciences, or Applied Social Studies	Registration requires police checks and practical experience. Renewal of annual practicing certificate requires a current competency certificate
Chartered accountant	Chartered Accountants Australia/New Zealand	Accredited Bachelor's or Master's degree from recognised tertiary institution, Graduate Diploma of Chartered Accounting (five modules, including a Capstone), plus three years mentored professional experience	Certificate of Public Practice requires a minimum of 20 h of CPD per year verified by a trusted third party, plus 20 h non-verifiable (informal) CPD
Librarian	Library and Information Association of New Zealand Aotearoa (LIANZA)	Recognised Bachelor's degree majoring in Information and Library Studies (ILS) or Master of Information Studies (MIS), Library Science specialisation	Voluntary registration requires completion of 30 CPD activities over three years, documented in a reflective journal

Table 2. Selected New Zealand professional programmes: staff structure.

University	School/ programme	Honorary staff	Clinical lecturer	Adjunct professor	Professional teaching fellow	Total staff
Auckland	Medical Sciences	172			18	488
	Medicine	186			29	528
	Nursing	47			31	111
	Pharmacy	21			11	58
	Law	3		1	16	75
	Business	15		11	103	366
Otago	Health Sciences		83			492 (approx)

The comparatively minimal requirements for professional LIS qualifications suggest that the library profession is less mature than medicine and dentistry, for example. Geffen's examination of the history of medical education in Australia, which began at roughly the same time as modern postgraduate library education, notes that in 1901, Australia had three institutions offering a basic medical degree, which increased to 18 in 2014 (2014, p. S19). Australian medical education currently has four levels: basic education providing an entry-level qualification, prevocational training requiring a one-year internship, vocational training for specialisations and CPD for all registered practitioners. It is not possible to say whether or not Williamson's recommendation for the structure of professional education, which was made at a time when library work was much more standardised than it is today, led to the lack of similar developments in LIS education. We believe that the increasingly complex nature of library work, illustrated by the list of topics identified by the University of Maryland study, justifies a wider range of qualifications, including specialisations that build on the entry-level qualification.

Another question raised by the comparison of LIS education with that for other professions is the extent to which professional practice is incorporated into the curriculum. In their

proposal for a practice-based model of teacher education, Ball and Cohen (1999) say 'professional education must be education for professional practice if it is to be either professionally responsible or usable'. This statement could equally well be made about professional library education.

With the exception of librarianship, all of the professions listed in Table 1 either include one or more practice-based courses (such as a field placement or internship) as part of the qualification, or require graduates to practice under the guidance of a mentor for a specified time period before they qualify for professional certification. The ALA's recently revised standards for accreditation do not mention practical experience (American Library Association [ALA], 2015), which raises the question of how graduates are expected to learn what is involved in practicing librarianship. While two of the three currently recognised New Zealand library studies programmes include a practicum course in their curricula, these are both offered as electives, rather than being required for all students.

In medical education, exposure to practice is typically done in what are known as 'teaching hospitals'. These are hospitals where students have the opportunity to interact with patients under the supervision of an experienced doctor or specialist as part of their education. Would anyone want to be treated by a doctor who did not have an opportunity to gain real-world experience as part of their training? In New Zealand teacher training, nominated schools play similar roles to teaching hospitals. 'Normal' and 'model' schools are used to give teacher trainees practical experience while studying. In contrast, newly educated librarians are expected to begin their professional practice without the benefit of similar experience while studying. We believe that library educators should consider developing relationships with 'teaching libraries' in order to give their students similar opportunities, in order to make them better prepared for their first professional appointment.

Some professional programmes also employ staff who have extensive practical experience, rather than requiring all staff to have a research focus, shown in Table 2. These positions are often termed 'clinical lecturer', 'professional fellow' or 'honorary professor'. Examining the staff lists of health-related professional programmes in New Zealand universities shows that in some cases up to one-quarter of the staff hold these types of appointments. Although some LIS programmes include adjunct staff who may have a similar role, it appears that many of them are employed only to teach special topics, rather than to bring a focus on library practice to the curriculum.

The other major difference between professional library education and that for other professions is the lack of advanced qualifications that build on an entry-level qualification. Triumph and Biele's (2015) examination of 957 academic library job advertisements concluded that these positions are becoming more specialised, with the emergence of more new job titles in 2011 than in similar research conducted in 1988 and 1996. In related research, Cox and Corral (2013) identified a range of emerging academic library specialities. Examples of these new roles/specialities include Scholarly Clinical Librarian, Communications Librarian, Metadata Librarian, Outreach Librarian and Assessment Librarian. Australian research examining the skills and personal characteristics of a broader range of information-related positions (including records management and knowledge management) showed that generic skills, such as communication and interpersonal skills, flexibility and adaptability, were mentioned more often than library-related skills such as collection and content management or cataloguing (Wise, Henninger, & Kennan, 2011).

Despite what these authors term a 'move to the generic', the number of articles examining the skills required for specific types of library positions is increasing, suggesting that specialisations do exist within the profession. For example, Hartnett (2014) examined changes in the skills and knowledge required for electronic resources librarian positions between 2000 and 2012, while Fu (2014) identified changes in the requirements for systems librarians from 2008 to 2012. It is clear from this that library practice involves considerable specialisation, but this specialisation is not well reflected in currently available qualifications. Is it time for professional associations that set standards for professional education and library educators to discuss whether there is a need for advanced specialised qualifications that would better meet the needs of employers? These discussions might also consider whether basic professional knowledge is now better suited to an undergraduate degree, which could cover the broader information professions, given the collaboration and convergence Howard (2015) identified.

If the answer is yes, the next step would be to identify the best ways of providing this. It is unlikely that a single LIS programme would be able to provide all of the specialisations necessary, but one model might be to build on the experience of the WISE consortium, in order to develop collaborative programmes drawing on expertise at different institutions. One partnership that may provide a useful model here is the San Jose State University (SJSU)/Queensland University of Technology (QUT) Gateway PhD programme, which allows students enrolled at SJSU to complete a PhD through QUT.

Conclusion

We will never know what the shape of library qualifications would be like if Williamson had recommended an undergraduate qualification as the basis of professional library education nearly 100 years ago. The preceding discussion has made it clear that although the content of qualifications has evolved to reflect changing practice, with a much broader professional knowledge base than in 1923, the underlying structure has not changed significantly. This differs from other professions, most notably medicine, which has developed a sophisticated structure of specialisations over the same time period. There are now opportunities to consider other models, including the development of specialisations, and a focus on exposing students to practice, that have the potential to add depth to library education, and strengthen the profession.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Brenda Chawner is a Senior Lecturer in the School of Information Management at Victoria University of Wellington, where she teaches courses on metadata, research methods and services to specific groups. Brenda's research interests include copyright and licensing of digital material, professional development and library and information studies education. Her PhD is from Victoria University of Wellington and she is editor of the *New Zealand Library and Information Management Journal*.

Gillian Oliver is Associate Professor in Archives and Records Management at Victoria University of Wellington, New Zealand. Her research activities are concerned with the cultural dimensions

influencing recordkeeping in organisations. Her PhD is from Monash University, Melbourne and she is co-editor-in-chief of *Archival Science*.

References

- Albee, B. (2015). Education for technical services librarians: Courses taught at accredited library and information science degree programs. *Technical Services Quarterly*, 32, 123–140.
- American Library Association. Committee on Accreditation. (2015). *Standards for accreditation of Master's programs in library and information studies*. Chicago, IL. Retrieved from http://www.ala.org/accreditedprograms/sites/ala.org.accreditedprograms/files/content/standards/Standards_2015_adopted_02-02-15.pdf
- Askew, C. A., & Theodore-Shusta, E. (2014). How do librarians learn assessment? *Library Leadership & Management*, 28(1), 1–9.
- Bailey Jr., E. C. (2010). Educating future academic librarians: An analysis of courses in academic librarianship. *Journal of Education for Library & Information Science*, 51, 30–42.
- Ball, D. L., & Cohen, D. K. (1999). Developing practice, developing practitioners: Toward a practice-based theory of professional education. In G. Sykes & L. Darling-Hammond (Eds.), *Teaching as the learning profession: Handbook of policy and practice* (pp. 3–32). San Francisco, CA: Jossey Bass.
- Bertot, J. C., & Sarin, L. (2015). The future of the MLS. *American Libraries*, 46, 40–42.
- Blakiston, R. (2011). Building knowledge, skills, and abilities: Continual learning in the new information landscape. *Journal of Library Administration*, 51, 728–743.
- Bonnici, L. J., Maatta, S. L., Wells, M. K., Brodsky, J., & Meadows III, C. W. (2012). Physiological access as a social justice type in LIS curricula. *Journal of Education for Library & Information Science*, 53, 115–129.
- Bronstein, J. (2007). Current trends in library and information studies curricula around the world. *Journal of Information, Communication and Ethics in Society*, 5, 59–78.
- Bronstein, J. (2009). Current trends in library and information studies curricula around the world. *Libri*, 59, 78–87.
- Burger, P. H., Kaufman, P. T., & Atkinson, A. L. (2015). Disturbingly weak: The current state of financial management education in library and information science curricula. *Journal of Education for Library & Information Science*, 56(3), 190–197.
- Chu, H. (2012). iSchools and non-iSchools in the USA: An examination of their master's programs. *Education for Information*, 39(1), 1–17. doi:10.3233/EFI-2010-0908
- Cox, A. M., & Corral, S. (2013). Evolving academic library specialties. *Journal of the American Society for Information Science and Technology*, 64, 1526–1542.
- Crum, J. A., & Cooper, I. D. (2013). Emerging roles for biomedical librarians: A survey of current practice, challenges, and changes. *Journal of the Medical Library Association*, 101, 278–286.
- DeArmond, A. R., Oster, A. D., Overhauser, E. A., Palos, M. K., Powell, S. M., Sago, K. K., & Schelling, L. R. (2009). Preparing science librarians for success: An evaluation of position advertisements and recommendations for library science curricula. *Issues in Science & Technology Librarianship*, 59. Retrieved from <http://www.istl.org/09-fall/article1.html>
- Dewey, M. (1876). The profession. *American Library Journal*, 1, 5–6.
- Dillon, A. (2012). What it means to be an iSchool. *Journal of Education for Library & Information Science*, 53, 267–273.
- D'Souza, L. (2015). The library in the twenty-first century: New roles, responsibilities, skills, and concerns. *Feliciter*, 61, 28–29.
- Fu, P. (2014). Supporting the next-generation ILS: The changing roles of systems librarians. *Journal of Library Innovation*, 5, 30–42.
- Geffen, L. (2014). A brief history of medical education and training in Australia. *The Medical Journal of Australia*, 201, S19–S22. doi:10.5694/mja14.00118
- Goldberg, B. (2012). What's new in LIS schools. *American Libraries*, 43, 24–26.
- Harris-Pierce, R. L., & Liu, Y. Q. (2012). Is data curation education at library and information science schools in North America adequate? *New Library World*, 113, 598–613.

- Hartnett, E. (2014). NASIG's core competencies for electronic resources librarians revisited: An analysis of job advertisement trends, 2000–2012. *The Journal of Academic Librarianship*, 40, 247–258.
- Hicks, D. (2014). The construction of librarians' professional identities: A discourse analysis. *Canadian Journal of Information and Library Science*, 38, 251–270.
- Hicks, D., & Given, L. (2013). Principled, transformational leadership: Analyzing the discourse of leadership in the development of librarianship's core competences. *The Library Quarterly*, 83, 7–25.
- Howard, K. (2015). There and back again: Is there a need for GLAM education? *Education for Information*, 31, 99–108.
- Jank, D. A., Chu, H., & Koenig, M. E. D. (2013). Mergers, collaborations, alliances, and partnerships in LIS education. *Advances in Librarianship*, 36, 185–222. doi:[10.1108/S0065-2830\(2013\)0000036010](https://doi.org/10.1108/S0065-2830(2013)0000036010)
- Jin, T., & Bouthillier, F. (2012). The integration of intelligence analysis into LIS education. *Journal of Education for Library and Information Science*, 53, 130–148.
- Joudrey, D. N., & McGinnis, R. (2014). Graduate education for information organization, cataloging, and metadata. *Cataloging & Classification Quarterly*, 52, 506–550.
- King, D. P. (2012). One practitioner's perspective on online cataloging education. *Cataloging & Classification Quarterly*, 50, 144–157. doi:[10.1080/01639374.2011.654383](https://doi.org/10.1080/01639374.2011.654383)
- Koh, K., & Abbas, J. (2015). Competencies for information professionals in learning labs and makerspaces. *Journal of Education for Library and Information Science Online*, 56, 114–129.
- Mackenzie, M. L., & Smith, J. P. (2009). Management education for library directors: Are graduate library programs providing future library directors with the skills and knowledge they will need? *Journal of Education for Library & Information Science*, 50, 129–142.
- Mahard, M., & Harvey, R. (2013, May 6–7). Digital stewardship education at the Graduate School of Library & Information Science, Simmons College. In C. Cirinna, K. Fernie, M. Lunghi, & V. Casarosa (Eds.), *Proceedings of the Framing the Digital Curation Curriculum International Conference (DigCurV 2013)* (pp. 1–4). Florence.
- Marty, P. F., & Twidale, M. B. (2011). Museum informatics across the curriculum: Ten years of preparing LIS students for careers transcending libraries, archives, and museums. *Journal of Education for Library & Information Science*, 52, 9–22.
- Mehra, B., Olson, H. A., & Ahmad, S. (2011). Integrating diversity across the LIS curriculum: An exploratory study of instructors' perceptions and practices online. *IFLA Journal*, 37, 39–51.
- Miller, S. J., Lee, H.-L., Olson, H. A., & Smiraglia, R. P. (2012). Online cataloging education at the University of Wisconsin–Milwaukee. *Cataloging & Classification Quarterly*, 50, 110–126. doi:[10.1080/01639374.2011.651193](https://doi.org/10.1080/01639374.2011.651193)
- Moulaison, H. L. (2012). A new cataloging curriculum in a time of innovation: Exploring a modular approach to online delivery. *Cataloging & Classification Quarterly*, 50, 94–109. doi:[10.1080/01639374.2011.653096](https://doi.org/10.1080/01639374.2011.653096)
- Mullins, J. (2012). Are MLS graduates being prepared for the changing and emerging roles that librarians must now assume within research libraries? *Journal of Library Administration*, 52, 124–132.
- Murphy, J. H. (2008). Schrödinger's course: The availability of courses on resources in science and technology among LIS programs. *Science & Technology Libraries*, 28, 307–324. doi:[10.1080/01942620802202337](https://doi.org/10.1080/01942620802202337)
- Murray, T. (2014). Applying traditional librarianship to new roles for special librarians. *Journal of Library Administration*, 54, 327–336.
- Phillips, A. L. (2014). What do we mean by library leadership? Leadership in LIS education. *Journal of Education for Library & Information Science*, 55, 336–344.
- Pomerantz, J., Wildemuth, B. M., & Oh, S. (2006). Digital libraries curriculum development. *D-Lib Magazine*, 12(7/8). Retrieved from <http://www.dlib.org/dlib/july06/07inbrief.html#POMERANTZ>
- Shera, J. H. (1971). *The foundations of education for librarianship*. New York, NY: Becker & Hayes.
- Singh, V., & Mehra, B. (2013). Strengths and weaknesses of the information technology curriculum in library and information science graduate programs. *Journal of Librarianship & Information Science*, 45, 219–231.
- Smith, C. L., & Roseberry, M. I. (2013). Professional education in expert search: A content model. *Journal of Education for Library & Information Science*, 54, 255–269.
- Swigger, B. K. (2010). *The MLS project: An assessment after sixty years*. Lanham, MD: Scarecrow Press.

- Triumph, T. M., & Beile, P. M. (2015). The trending academic library job market: An analysis of library position announcements from 2011 with comparisons to 1996 and 1988. *College & Research Libraries*, 76, 716–739.
- Vassilakaki, E., & Moniarou-Papaconstantinou, V. (2015). A systematic literature review informing library and information professionals' emerging roles. *New Library World*, 116, 37–66.
- Williamson, C. C. (1923). *Training for library service: A report prepared for the Carnegie Corporation of New York*. New York: (n.p.); Fascim. Ed. published Ann Arbor, MI: University Microforms, 1970.
- Wise, S., Henninger, M., & Kennan, M. A. (2011). Changing trends in LIS job advertisements. *Australian Academic & Research Libraries*, 42, 268–295.
- Yi, K., & Turner, R. (2014). The current landscape of the school librarianship curricula in USA. *Journal of Education for Library & Information Science*, 55, 303–321.