Library and information science (LIS) education has always struggled to find and keep its place in the academic world. As one of the first identified "interdisciplines" or "transdisciplines," it has been rooted in the processes that are required to build, describe, and provide access to collections of objects that are the products of research done in other fields. For instance, the establishment of the first bibliographic databases was not a library innovation but was done by scientists and engineers so that research results could be easily shared in the postwar era. Therefore, LIS has existed within a variety of administrative structures. The first independent library school was the Columbia School of Library Economy headed by Melvil(le) Dewey, and many other schools followed the same model. In the 1980s, however, some of the major library schools (at both Columbia and the University of Chicago) closed or became departments within other schools, such as liberal arts, education, business, communication, or computer science. These structural changes have continued with some LIS departments having moved from one school to another to another, never finding a disciplinary home that works.

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Article:

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These structural changes have continued with some LIS departments having moved from one school to another, never finding a disciplinary home that works.

One major reason for this lack of a coherent discipline is that LIS is oriented around practice. In order to advance scholarship that resembles other sciences and social sciences, LIS has borrowed theory and research methods from other disciplines. To understand the process of acquisition and management, it was necessary to look to the business world. Description and organization began as a distinct set of LIS processes, but those have been overwhelmed in the past four decades by the computer science orientation toward metadata that are used now to access and control all information records. Providing access to resources and the communication processes involved in providing reference service was about the people served, so the social sciences, especially sociology and psychology, were mined in order to understand human behavior.

Those same disciplines still provide inspiration to the field, but other responsibilities in the core mission have required deeper instruction in using technologies that control information, so much so that information science has become central. As early as the 1980s, the combination of library science with information science was already evident with many programs starting to offer degrees that were called "master of library and information science," or sometimes "studies" (MLIS), instead of the more traditional "master of library science" (MLS). However, in the past decade, some programs have eliminated the term library from their program and degree names, especially those that have aligned with the iSchools movement, such as Rutgers University, where the school housing library science was renamed from School of Communication, Information, and Library Science to School of Communication and Information in 2009. A later section of this chapter will detail the change in three LIS programs that illustrates the tension between these two parts of the field and what it means to human resources in academic libraries.

In some ways, the academic library has been through similar changes. Once the center of university life and focused on a collection of physical objects, libraries have been combined with information technology departments, taken on instructional technology roles, or merged with student services. The variety of merged entities is especially visible in community college libraries, which have smaller staffs and infrastructures. Other chapters in this book provide details about the workforce impacts of these merged structures on other types of academic libraries.

In the late 1800s, as libraries were expanding in the United States, librarians were educated within the institutions they served. Practicing librarians were the teachers and mentors to the next generation of employees. At that time, university libraries used their own unique practices including site-specific cataloging classifications and standards. When libraries started to cooperate and looked to centralize processes that were shared across different libraries, practice itself was standardized and offered in a curriculum that would prepare students for work in any institution. Library programs were created, and specialized library faculty, often but not always former practitioners, were educated to serve them. The standardized curricula could be prescribed by organizations, such as the American Library Association. These prescriptive standards were first codified in 1925 and have been updated continuously since. The impact of accreditation requirements on library education will be discussed in the next section.

Library educators not only revise the curriculum to correspond with the work of practicing professionals but also work to lead librarians by spearheading theoretical research that can support changes in methods and activities. Practice and research are integral parts of a
holistic view of an evolving profession. How the communication from practice to curriculum happens is the subject of this chapter.

The role of accreditation

Colleges and universities in the United States have been accredited since the late nineteenth century. The process is not done by the government but based on self-review and peer verification. The more familiar process of institution accreditation is done by regional accrediting agencies that look at the organization level to ensure adherence to standards of quality that are agreed upon throughout the higher education world. A secondary outcome is to offer suggestions for continuous improvement across the institution and its programs, both undergraduate and graduate. The type of accreditation that governs LIS education is specialized and looks only at the unit or program level that offers the master's degree.

The main accrediting body for LIS education in the United States and Canada is the American Library Association (ALA) and its Committee on Accreditation (COA). The committee began in 1956, but ALA established a similar body termed the Board of Education for Librarianship as early as 1924. According to the ALA website, "Accreditation is both a process and a condition." The process is completed by a committee composed of both practitioners and academics who work to ensure that a program is both high quality and adheres to the standards of the profession. A program is in the accredited condition when it has demonstrated that it has qualified faculty and that it will provide a high-quality set of courses and experiences that will make students ready to serve library institutions in the United States and Canada. Programs are accredited for seven years after going through a period of conditional status.

COA members include two public members, eight ALA members, one Canadian member, and one dean or director of an ALA-accredited program. The membership rotates and is term limited, allowing fresh knowledge and expertise to be added to the reviewing body. The COA recommends the standards and processes that will be used to evaluate programs for approval. These standards are subject to change and were last completely updated in 2015 with a slight revision in 2019.

Methods for identifying emerging content areas

One area that clearly shows the effect of information science on LIS education is the changing disciplinary preparation of faculty members. At one time, the faculty in LIS was comprised primarily of people who held an MLS (or equivalent) and studied for doctorates in either the discipline or related fields after serving in a library. Now, it is increasingly likely that faculty members come to LIS professorship with work experience and/or academic preparation in computer science, information technology, instructional technology, or information systems rather than library education or experience. Without direct practitioner knowledge garnered in library settings, the construction of courses and curricula can be difficult. In addition, even faculty with practical experience may have acquired it more than five years ago. Much of that experience can be considered useless for constructing relevant course content.

Therefore, LIS programs and faculty have developed other methods to determine how to keep individual course and program content current. This section reviews how adjunct faculty, advisory boards, experiential learning opportunities, job postings, practitioner conferences and
literature, and professional competency guidelines are used as sources for understanding the changes in the LIS field.

Adjunct faculty

Due to the variable size of enrollment and the occasional lack of expertise held by LIS faculty, many programs need to hire part-time instructors to teach parts of the curriculum that are changing rapidly or are considered as an emerging professional role. These faculty members are working in the field and often have advanced degrees beyond the master's as well. Their knowledge of how work is presently being done in library organizations is an invaluable contribution to course and curriculum development. This kind of revision is not always possible. In some programs, the syllabus is prescribed and must be the same for all sections of a course whether taught by a fulltime faculty member or an adjunct, which can lead to the balkanization of the content. A successful LIS program listens to its adjuncts to help it identify and address the content that requires change. In addition, full-time faculty members work with adjuncts to create permanent new courses that are offered repeatedly in the program by those same adjuncts or others.

Advisory boards

Most LIS programs operate with an advisory board comprised of people who work in the LIS field. Many of these members may be alumni/alumnae of the program, but others may be leaders such as state librarians, presidents of state associations, or prominent academic library directors or deans. The purpose of the board is to help a program learn about new trends in the field, hear problems with the skills and knowledge possessed by new graduates, and help with strategic planning for outcomes that enhance the standing of the program and librarianship in the world at large. Meetings are held once or twice per year with a rotating membership that can bring fresh perspectives to the makeup of the courses, the planned outcomes of the program, and faculty hires.

Experiential learning opportunities

The internship or practicum is another place where faculty and librarians can work together to share the changing skills and abilities that are emerging in the workplace. There are many names for this type of work done in a library or information organization for credit toward the master's degree, but the plural form practica will be used throughout the rest of this chapter. Even within course assignments, there are opportunities for faculty to learn from professionals about changes in the field. For instance, many core courses require that students interview someone who is working in the part of the field to which they aspire. These interviews alert faculty to what is important in library organizations now. Another good example of a class-oriented assignment is a library service assessment project where the product could actually be useful to the library organization where it takes place. Practicing librarians should be sure to ask for the results of these projects.

In the case of practica, the editors of this volume have written about some of the important features of a good practicum in previous work. They are as follows:
• Job descriptions. There should be a clear description of the intended experience for both
the LIS program and the student who will be working for the institution.
• Goals. The best practica have clear goals for what the student will learn and what they
will contribute to the institution.
• Communication. There must be clear avenues for communication between the LIS
faculty and the staff member(s) who will supervise the student during the experience.
• Evaluation. The LIS program will use an evaluation to provide the student with a grade,
but this is also an opportunity to provide a critique of the student's overall preparation for
the field. It is especially helpful when those results are shared with the student directly by
the supervisor as a job performance review might be. It will cement the importance of
these lessons for future employment.

Practica can affect the librarian supervisor and the organization as well. That impact is
greatest when the practicum is designed with a learning mindset on the part of the librarian(s)
involved in supervision. One result obtained from earlier research is that supervising librarians
were often faced with reviewing their own assumptions about how and why they did their jobs
every day.12 Interacting with students can bring up questions that can lead to literature review or
some other learning experience that can change the status quo for the librarians and, ultimately,
the library. A learning organization can face the future better prepared to adapt to changing
conditions by confronting these questions within the framework of a practicum experience.

A comprehensive and international survey in 2014 showed that only 17 percent of ALA-
accredited library programs require a practicum experience.13 An unpublished review of those
same institutions' websites in 2019 found that for 50 percent of the programs there are no explicit
requirements, which meant that either it was not clearly explained or it was recommended
without being required, while 25 percent required it only for some concentrations, usually school
libraries or archives. That left only 25 percent of the sixty-six ALA-accredited LIS programs
requiring the practicum for all students.

Graduating with an MLS but no supervised experiential learning may be one of the
reasons for the perceived disconnect between theory and workplace practice that is felt by
professional librarians.14 Many LIS students have not performed work in a library with
mentorship and supervision in place and have not been required to engage in reflective
practice.15 Without this preparation, graduates can begin academic library positions without
understanding how they fit into the environment where they hope to serve.

The LIS department at the University of North Carolina at Greensboro (UNCG) has
recently revised the final experience before graduation from a simple portfolio of work done into
a portfolio and practicum or a portfolio plus a practice-based research project. It is hoped that
this will better prepare our graduates to enter the library profession. But there are anticipated
problems with this new requirement:

• Will there be enough information organizations willing to work with the department to
devise appropriate experiences?
• Will there be willing and experienced mentors in the organizations located where a
student lives? Given that much of library education is now presented in an online format
and students live far from Greensboro, North Carolina, the difficulty of this cannot be
understated.
• What will happen when a practicum fails--on the part of either the student or the organization?
• Should a practicum be required for those with significant experience as library staff?

These issues may be the same for other LIS programs, which explains why there has been a reluctance to establish a requirement. The last issue is especially thorny. Is library experience of any kind the same as working with a professional on reflective practice? One way that the UNCG LIS department has resolved the issue is to put in place an alternative to the practicum, which is a library service design project. It is hoped that this type of assignment will provide library organization context and work with professional level problems for those who are already familiar with the basics of librarianship. Whether this is successful or not will be the subject of assessment.

LIS programs regularly review supervisor evaluations from practica for descriptions of students' lack of preparation for the experience. This type of review is mandated by the accreditation process. More could be done to systematize these reviews so that a direct match from course learning outcomes to knowledge gaps is made, but this is done on a program-by-program basis. It is difficult to generalize to the entire profession.

Job postings

There are many articles on how job postings have been used to renew, redesign, or completely change courses in order to prepare students for emerging positions in the field. In recent years, articles have been published about educating students for work in digital curation, educating students as technologists, and even the effect of the new duties of public librarians. Many of these studies have relied on collecting job ads from the starting point of the project to a specified end time and then analyzing the descriptions to ascertain what knowledge, skills, and abilities are being requested.

In preparation for this chapter, we were able to obtain access to a spreadsheet containing the entire list of job ads published on the American Library Association job board from 2007 to 2017 (American Library Association, personal communication with author, October 14, 2019). This database allowed us to pinpoint the emergence of certain position titles and descriptions that mark changes in the profession. We looked specifically at job titles or duties that mentioned one of the following: data management, digital projects, electronic resource librarian (ore-librarian), scholarly communication, or student success. Metadata labels were applied that describe a job function in terms of new nomenclature found in the field. The labels are described in table 5.1.

A close look at these figures indicates that digital projects, e-librarian, instruction, and metadata have become important parts of the field with the number of job postings increasing almost every year. This is the kind of evidence that may prompt LIS departments to revise the core curriculum to ensure that an introduction to each of these topics is available to all students. The UNCG LIS program, for instance, has incorporated metadata into the information organization class that once focused exclusively on traditional cataloging using Dewey Decimal, Library of Congress, and subject headings.
Consistent growth can be seen in postings labeled data, GIS, scholarly communications, and user experience as well as in Table 5.1. The numbers for these postings are still low, however, indicating that not every student needs an introduction to these parts of the field. Instead, these results indicate that LIS programs should look at adding specialized classes that will prepare students for these jobs or to revise present higher-level courses to include new content.

The metadata assigners found mismatches with the labels for "Job Function" found in the database. For instance, many jobs were labeled as "Information Literacy," but instruction was not an integral part of the job description. Another example was the job function label "Web Services," which is assigned by ALA. However, a close examination of these jobs found that the desired skill set might better be described as a UX librarian (how the website and other media are experienced by library users), an e-librarian (those who manage electronic resources as either collection managers or catalogers), or a user engagement librarian (one who creates content for the website, the social media outlets, and even press releases). Obviously, the ALA categories are broad and are supplemented by the position title and job description, but it does seem to indicate that there is some fluidity in the use of terms by the field.

LIS programs do need to remain vigilant to changes in job postings to ensure that courses accurately reflect what is required to work in the field. At the same time, practitioners need to use consistent language to describe what they need from new hires. They also need to remember that no degree program can produce a perfectly prepared professional to the context of a particular job. The master's degree is not vocational training but a preparation for professional work that will change and evolve over the graduate's lifetime.

Practitioner Conferences and Literature

The LIS faculty contributes to the library workplace conversation through attending and presenting at library conferences. Sections or roundtables at major organizations present the research findings of the LIS faculty. For instance, the ALA's Library Research Roundtable sponsors a forum during the annual ALA conference and an occasional conference called the
Library Research Seminar, where faculty researchers, graduate students (both masters and doctoral), and librarians gather to consider the ramifications of research findings for practice. In addition, LIS educators are members of a division of ALA named the Association for Library and Information Science Education (ALISE), which holds an annual meeting.

An important international organization is the International Federation of Library Associations. Members of national library organizations like ALA are considered members of this organization. The Education and Training Section ([https://www.ifla.org/set](https://www.ifla.org/set)) discusses pedagogy and emerging parts of the field.

The past few years have seen a realignment of the ALISE conference from being held near ALA Midwinter to being connected to an information science organization, the American Society for Information Science and Technology (ASIS&T). It marks another turning point for the field because the information science arena has a much different conference landscape that is not well attended by library practitioners, and yet LIS faculty often present work in these conferences that is relevant to the library workplace and to educating professionals. ASIS&T holds an annual conference and publishes the journal with the highest citation rate in the field. This organization draws attendees from libraries, industry, and higher education. Another important conference in this field is the iConference ([https://ischools.org](https://ischools.org)), which has been held annually since 2005. One of the topics often discussed is education in LIS. The iSchools movement has been growing in the United States and internationally. Three out of the last five iConferences have been in China, England, and Sweden. Certainly, LIS education and research has moved beyond the purview of only the ALA. It can be surmised that this movement away from the main professional organization creates a chasm between library practitioners and research, but there is no literature to substantiate this assumption.

Professional competency guidelines

The American Library Association provides the basic list of competencies that are expected of all new librarians with a master of library science in the field. In addition, ALA maintains lists of competencies promulgated by separate divisions of ALA and other library organizations. Some of the more important ones to this discussion are the NASIG Core Competencies for Scholarly Communication Librarians and their Core Competencies for eResource Librarians, Core Competencies for Cataloging and Metadata Professional Librarians, the Special Libraries Association Competencies for Information Professionals, and Society of American Archivists' Guidelines for a Graduate Program in Archival Studies.

LIS programs routinely review such statements as they look to revise their curricula and their courses. The American Library Association is considered first, since the accreditation process must approve what they do, but the others are examined when particular courses or specialties are under consideration for revision. In addition, many faculty members review these as they are planning their class for each semester.

Case Studies of LIS Program Revision

ALA-accredited programs must undergo a systematic review every seven years, more often if a program has had a less-than-favorable report in a prior year. These reviews are internal documents and are not necessarily available for review outside the COA. This section will review two published case studies—one from Charles Sturt University in Australia and the other
from Rutgers University School of Communication and Information—and one internal program review from the University of North Carolina at Greensboro for evidence of how LIS programs can and do make serious revisions to courses, curricula, and recruitment to graduate the best librarians to serve in academic institutions.

Charles Sturt University

In a published report, Charles Sturt University outlined the reasons for revising their curriculum and the methods used. Pressure toward revision came from the increase in the number of online students without a comparable increase in the number of library positions in Australia and from a series of reorganizations that had removed several components of the program to other schools. The shrinking number of library positions is a pressure felt globally, and LIS educators are aware that some of the skills that we have connected with only libraries can be used in other professions.

Similar pressures are extant in the United States and Canada. In the past five years there has been a consolidation with computer science departments (University of Pittsburgh), business schools (Clarion University), and learning sciences (University of Missouri). Though each institution has its own reasons for doing this, one result has been to diminish the role of libraries in the curriculum.

In order to study the large-scale changes needed in the curriculum, Charles Sturt convened a series of focus groups with representatives from a wide range of information professions, and the resultant data was analyzed by a curriculum working party. The analysis and curriculum change suggestions were then reviewed by more than sixty practitioners and educators. The curriculum maintained a wide core based in librarianship. "This transformation represents what could be described as a move from a traditional Library and Information Studies (LIS) approach to a broader Information Studies (IS) orientation, accommodating advanced areas of study in specific fields, including librarianship (L)." The new curriculum took a transdisciplinary approach, including information architecture, records and archives management, knowledge management, and community informatics. As stated by Philip Hider and others about their work at Charles Sturt, "Time, and future graduation destination surveys, will tell if the move towards an integrated information studies curriculum was the right one."

Rutgers University

The published description of what was done at the Rutgers University School of Communication and Information is not as detailed as that for Charles Sturt, but the department's 2018 ALA Committee on Accreditation explains the changes that were made. It can be seen that some of the same pressures existed within Rutgers, including a consolidation of departments and the acknowledgment of the changing nature of the LIS field.

Rutgers University had offered the MLS since 1953 when the program was housed in a separate school. The innovative redesign began in 2013 with the task force chaired by Lilia Pavlovsky. The result was a wider, more inclusive framework for the curriculum and program and the development of six strategically defined subject concentrations under a degree termed "Master of Information (MI)." These concentrations are library and information science; school librarianship; data science; archives and preservation; technology, information, and management;
and interaction design and informatics. These focus areas are many of the emerging roles that we identified in the ALA job list (see table 5.1). By placing them under the ALA-accredited umbrella of the MI, the scheme unites the field in a new and important way.

The University of North Carolina at Greensboro

During the last accreditation cycle in 2017, it was acknowledged that the Department of Library and Information Studies (recently changed to Science for fall 2019) at UNCG had drifted away from the competency guidelines mandated by several of the standards discussed earlier in this chapter. The approach taken was to visit or revisit those competencies in the set of core courses and to revise our program learning outcomes (PLOs) to match the competencies. In consultation with the advisory board, the program identified seven new learning objectives that would be required of every graduate, no matter where they chose to serve in their careers:

- PLO 1. Connect people to information and information technology, particularly to promote a just and equitable society.
- PLO 2. Assess and respond to the needs of diverse communities.
- PLO 3. Analyze problems and propose solutions through the application of evidence.
- PLO 4. Use instructional strategies and communication in both formal and informal interactions to increase information competence.
- PLO 5. Advocate for public policies, laws, organizations, and resources that promote a just information society.
- PLO 6. Embrace change to lead organizational innovation.
- PLO 7. Communicate and collaborate with colleagues and communities.

To enact these new PLOs the core courses were deeply revised with assignments that would provide evidence for how the student had met these new objectives. There is not a one-to-one match between PLO and core course, but rather several PLOs are integrated into the entire core course structure. This ensures there is redundancy across the entire program.

This process may be seen by some as pouring new wine into old barrels. Why build on the old course structure rather than build an entirely new core? Our analogy for this action is to think about how bourbon is aged in old wine casks. The basic tenets of the library profession are traditional but important, and those tenets must be communicated in conjunction with new skills. One of the reasons library organizations have not yet abandoned the MLS as a prerequisite for professional service is that they understand something in the core values of librarianship is missing from an education focused only on information technology and management.

One important aspect of these PLOs is an emphasis on equity, diversity, and inclusion in the curriculum. This is only one step. Further work in this area will require new faculty members who are themselves diverse and new courses that provide for a deeper understanding of these issues; however, it is crucial to make sure the core courses introduce every student to the problems inherent in the profession on these topics.

The impact of the PLOs is assessed in the final core course, the capstone. In the past, this was a one-credit course centered on a portfolio with reflections about how the student could demonstrate understanding of the learning outcomes. UNCG LIS wanted to be sure that students were prepared to bring actual experience to the workplace with their degree. The capstone course was expanded to three credits and a requirement that students complete either a practicum in a
library setting or a design project focused on a LIS problem. Giving students the choice provides those with significant library experience a chance to show that they can do research in the field and present those findings in appropriate ways.

Assessing Effectiveness

For all three programs, assessing the effectiveness of these changes is key. Only the workplace can judge whether these initiatives are producing the kinds of graduates who can perform the jobs that are available. Human resource professionals are in the best place to inform LIS departments about the people they hire and their fitness for the positions that they hold. Working with library educators can provide the feedback needed to impel further changes to the curriculum as the profession continues to evolve.

Recruiting students with different preparation

The curricular changes that have been made in LIS education encourage programs to attract and recruit a different kind of student. There is a myth that the important prerequisites are focused on book-handling processes. Potential students will say that they are organized and interested in working with materials and artifacts. However, reviewing program changes made and reading other chapters in this volume show that we need students who have more digital skills, science or technology backgrounds, and a focus on working with diverse and even difficult clients. A recent study by the University of Maryland pointed to a need for librarians to be "fearless, savvy, and disruptive."31 If that is indeed the case, then a propensity for organization not a strong criterion for admission into a graduate program. There are inherent difficulties in assessing fitness for a LIS program, but for this chapter it sufficient to point out that LIS educators are working toward encouraging diversity in preparation, demographics, and outlook.

Conclusion

LIS programs are revised through working with library professionals, but the workplace can also be changed by interacting with LIS faculty. That is the main point of this chapter. Programs cannot be constructed in a vacuum that includes only research-driven agendas, and the library workplace cannot work without a research base. Multiple points of connection must be made between library practitioners and LIS faculty in order to help the LIS profession evolve for the future. Several methods that LIS programs use to revise their curriculum and program were described in this chapter. Library HR professionals can also be proactive in connecting with LIS educators. Some suggestions for doing that:

- Consider working as an adjunct for a LIS program either near you or through a distance program.
- Volunteer to be an advisory board member for a nearby library school or your alma mater.
- Respond to employment surveys when asked by LIS departments to share your concerns.
- Share new job postings with library schools.
- Design meaningful practica for students who live in your area but may attend a distance library program and work with them on student projects.
• Contribute to the establishment of professional competency guidelines for emerging areas of the profession.

As stated earlier in the chapter, LIS educators and practicing librarians are members of the same profession and are after the same end: a strong workforce that meets the information needs of its constituency. Working toward those ends together is the best way to evolve and maintain the integrity of the discipline that is important to all parties.

Notes

9. Estabrook and Montague, "Library and Information Science Education."
10. Mary Alice Ball, "Practicums and Service Learning in LIS Education."
11. Nora Bird and Michael Crumpton, "Real Learning Connections."
12. Bird and Crumpton, "Real Learning Connections."
13. Nora Bird and Fatih Oguz, "Internship in LIS Education."
14. John Berry, "The Practice Prerequisite."
15. Donald A. Schön, Educating the Reflective Practitioner.
19. "NASIG Core Competencies for Scholarly Communication Librarians," NASIG,
20. "NASIG Core Competencies for Resource Librarians," ASIG,
21. “Core Competencies for Cataloging and Metadata Professional Librarians," ALCTS Board of Directors
22. "Competencies for Information Professionals," Special Libraries Association,
24. Philip Hider, Mary Anne Kennan, Lyn Hay, Sigrid McCausland, and Asirn Qayyum, “Moving from LIS to IS+L.”
27. "Rutgers-SCI-Self-Study-2018-FINAL.Pdf," Rutgers University School of Communication and Information,
30. Kafi D. Kumasi and Nichole L. Manlove, "Finding 'Diversity Levers' in the Core Library and Information Science Curriculum."
31. John Carlo Bertot, Lindsay C. Sarin, and Johnna Percell, "Reenvisioning the MLS: Findings, Issues, and Considerations."