

Meredith A. MacPherson. Alternative Careers for Graduates of Library Science Programs: Are Library Schools Doing Enough? A Master's Paper for the M.S. in L.S degree. April, 2008. 60 pages. Advisor: Rita W. Moss

This study determined the extent to which library science (LS) programs prepare recent graduates for careers in non-library, or alternative, settings. A review of the literature indicated that the proliferation of information technology in private sector businesses has impacted the employment prospects for LS graduates. Qualitative data collected from job advertisements and LS course descriptions was analyzed and the extent of the overlap between the skills required by employers and the skills taught by LS programs was ascertained. Job advertisements were collected and the skills and qualifications required by employers were recorded, analyzed, and coded. These categories of skills were then compared to the skills mentioned in the online course catalogs of nine ALA-accredited LS programs. The results of this content analysis revealed that employers most often require communication skills (67.27%), analytical skills (54.55%), and knowledge of industry concepts and terminology (63.64%) and industry resources (63.64%). The researcher concluded that the nine programs examined in this study adequately address these skills and knowledge areas. This work contributes to studies of the impact of technology on the profession of librarianship, the emergent job market for LS graduates, and the educational trends of LS programs.

Headings:

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Alternative Careers for Graduates of Library Science Programs: Are Library Schools
Doing Enough?

by

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TABLE OF CONTENTS

Introduction.....	2
Research Problem, Objectives, and Questions	2
Definitions of Terms	3
Purpose of the Study	4
Literature Review.....	5
Impact on the Profession.....	5
Skills Essential for Success.....	8
LS Education and the Job Market.....	10
Trends in LS Education	14
Methodology	17
Justification of Method Selection	17
Limitations of the Method	18
Data Collection and Treatment	19
Instruments.....	23
Results.....	25
Job Advertisements.....	25
LS Programs.....	36
LS Course Offerings	40
Importance and Implications of the Study	46
Summary and Conclusions	48
References.....	50
Appendix A: Vocabulary List.....	53
Appendix B: Data Collection Sheet for Job Advertisements.....	54
Appendix C: Codebook for Job Advertisements	55
Appendix D: Data Collection Sheet for LS Programs	58

INTRODUCTION

The proliferation of digital information and technology has transformed how people locate, access, and use information. In the private business sector, the use of digitized information and computer-based research, communication, and management tools has spawned a new breed of librarian, one who is "connected to librarianship but outside the library" (Williams, 1994, p. 43). Trained to find, evaluate, organize, and present information, librarians "...are in an excellent position to take advantage of the expanded opportunities created by the digital revolution" (Fagerheim, 1999).

Pharmaceutical companies, consulting firms, publishing houses, and other private sector businesses need competent librarians to manage this abundance of information and technology. Consequently, many practicing librarians and recent library school graduates are re-purposing their credentials and transitioning to careers in alternative, non-library settings.

RESEARCH PROBLEM, OBJECTIVES, AND QUESTIONS

As the information needs of private sector businesses continue to evolve, the job market for library science graduates will continue to change; however, the extent to which library science programs are adapting to this fluctuating terrain is uncertain. A preliminary review of the literature revealed that employment-related research tends to focus on "the emergent market for information professionals" (Cronin, 1993), "personal transferable skills for the modern information professional" (Gash, 1988), "graduate

employment outcomes" (Genoni, 2000), and "alternative careers for graduates of LIS schools" (Weech, 2007), rather than on the extent to which library science programs are preparing their students for non-traditional careers.

In response to this research deficiency, the present study has developed two objectives. First, the study will survey the relevant LS literature and job postings to identify the skills essential for LS graduates interested in pursuing alternative careers. The study will then apply this rubric to several library science programs in order to evaluate the extent to which these selected programs prepare students for non-library positions. These objectives directly inform the present study's research questions: first, what skills and educational backgrounds are desired by employers in non-library settings; and, second, to what extent are library science programs preparing students for careers in these alternative settings?

DEFINITIONS OF TERMS

To ensure successful communication of the research objectives, it is necessary to articulate the present study's understanding of two of the concepts supporting this research: the term "alternative career" and the term "preparing." For a position to qualify as an alternative career, it must satisfy the three conditions provided by Weech and Konieczny (2007) in their examination of employment destinations for library and information science graduates. First, the position must involve work in an area that does not typically require a professional degree in library science (p. 68). Second, the position must not act as a direct liaison to libraries and/or librarians, such as a book jobber or database vendor (p. 68). Finally, the position must have a majority of employees with academic and professional backgrounds other than LS (p. 68). Ultimately, the criteria for

an alternative career "turns on the recognition of the preference or requirement of an LIS degree for qualification" (p. 68). Unlike Weech and Konieczny's study, however, the present study only considered the requirement of a LS degree (rather than a library and/or information science degree) when analyzing job advertisements.

Like the phrase "alternative career," the term "preparing" will be used repeatedly throughout this study and requires an explanation of its intended meaning. Defining this term, however, is a difficult task, for individuals have different understandings, perceptions, and standards of preparedness. Course offerings certainly contribute to an individual's preparedness for an alternative career, but so too does an individual's personality, interests, and previous degrees and employment experiences. This study, then, will determine the extent of a program's preparation of its students by examining the overlap of the skills enumerated in its course descriptions with the skill preferences and requirements of employers.

PURPOSE OF THE STUDY

The purpose of the present study is to determine the extent to which LS programs prepare students for alternative careers. This study conducted a content analysis of job advertisements and course descriptions to ascertain the degree of overlap between the skills taught in LS programs and the skills desired by employers. Ideally, the results of this study will encourage LS faculty and administrators to revisit and, if necessary, modify the curricula of their programs in order to prepare their students for successful careers in alternative settings.

LITERATURE REVIEW

The impact of information technology on the profession of librarianship is a foremost concern for many LS researchers, practitioners, and educators. Several essays (Koenig, 1993; Hunt, 1995) report that the proliferation of digital information and electronic research, communication, and management tools and systems has spawned a new breed of librarian. This trend toward alternative employment destinations has generated additional research aimed at ascertaining the skills essential for success in alternative careers (Gash & Reardon, 1988; Intner 1998; Lai, 2005). Finally, because the profession and the employment landscape continue to evolve, many studies have undertaken an assessment of LS education, evaluating the extent to which specific programs have prepared students for the job market (Cronin, Stiffler & Day, 1993; Genoni, Exon & Farrelly, 2000) and have modified their curricula (Irwin, 2002; Markey, 2004). All of these essays and empirical studies contribute to the present study's research question: to what extent are library science programs preparing students for alternative careers?

IMPACT ON THE PROFESSION

As previously mentioned, the transition from paper to electronic formats, tools, and systems has impacted the profession of librarianship. Patrick J. Hunt (1995) describes this transition from paper to electronic mediums as a "structural

transformation," one that has fundamentally altered the role of librarians in private sector businesses (p. 5). Pharmaceutical companies, publishing firms, and various other private sector companies seek and generate immense quantities of information and, consequently, they look for employees that possess "knowledge-intensive" skills, such as data interpretation, information mediation, and knowledge management (p. 5). Professionally trained, information literate professionals have thus been able to re-purpose their LS credentials and to pursue careers outside of the traditional library. The unique skill set and interdisciplinary education generally acquired through graduate-level LS programs (p. 6) has enabled many recent graduates and practicing librarians to secure non-library, information-intensive positions (p. 5).

Michael E.D. Koenig (1993) corroborates this assessment of the profession in his analysis of LS educational requirements. Given the nature of private sector businesses and the type of work increasingly performed by information professionals, "it is no longer sufficient for such education to focus on the operation of libraries and the provision of information services; it is now requisite that there also be a focus on the design and creation of information systems" (p. 2). The increased use of technology in the workplace and the "convergence of... [academic and professional]...fields and disciplines" (p. 5) has expanded the employment opportunities for LS graduates. To serve the needs of their students, LS programs must modify their curricula and broaden their understanding of librarianship. Similarly, professional bodies should update their accreditation standards to accommodate the emerging educational requirements of LS students.

Written at least ten years ago, these two essays underscore the persistence of this shift toward alternative employment destinations. The Occupational Outlook Handbook, a publication distributed by the U.S. Department of Labor's Bureau of Labor Statistics, confirms the assessments provided by Hunt and Koenig. The 2008-2009 edition of the report notes that, despite a "slower-than-average projected employment growth," employment prospects for librarians will most likely still be favorable due to the large number of practicing librarians expected to retire in the next ten years (BLS, 2008, p. 1). Employment growth in traditional library environments, such as academic, public, corporate, special, or government settings, will be curbed by budget constraints and less-costly library technicians and assistants may replace many librarians in these traditional environments (p.3). Furthermore, the increased use of electronic resources will lessen the demand for professional librarians capable of maintaining the resources and instructing the public on their use (p.3). As a result of these factors, opportunities for librarians outside traditional settings are projected to grow the most between 2006 and 2016 (p. 3).

As Hunt and Koenig noted, private corporations and organizations generate immense quantities of information and, consequently, they are turning to LS graduates to fill these information-intensive positions. Recent graduates and practicing librarians can analyze, evaluate, and organize raw data and manage tangible and virtual information and knowledge. This proliferation of information and technology in the for-profit sector has created a niche for LS graduates, but the response of LS programs to this trend has yet to be adequately addressed in the literature.

SKILLS ESSENTIAL FOR SUCCESS

The changing employment trajectories of LS graduates requires clarification of the skills considered essential for success in alternative careers. To identify the personal transferable skills vital for information professionals, Gash and Reardon (1988) analyzed the skill preferences of employers and the recommendations of two professional bodies, the Institute of Information Scientists (IIS) and the Library and Information Services Council (LISC). Based on their literature review, the authors posited that communication, teamwork, and interpersonal skills would be most preferred by employers.

To test their hypothesis, the researchers compared the skills listed in job advertisements to the skills recommended by two professional institutions. They grouped these specific skills into 23 categories and they compiled a three-column chart indicating the type and source of the skill (job ad, IIS, or LISC). If a skill appeared in all three columns, the researchers deemed it a personal transferable skill, an essential work skill not specific to any subject or profession and easily transferable to another context (p. 285). Nine of the 23 identified skills appeared in all three columns: analytical, computing, effective presentation of information, numeracy, publishing, research, use of English, verbal/listening, and writing (p. 288). Five of these skills are communication-based, so the researchers partly confirmed their initial hypothesis; however, they fail to disclose the specifics of their classification scheme and their methodology, so it is difficult to gauge the reliability of their results. Nevertheless, by identifying these transferable skills, Gash and Reardon contribute to the present study's establishment of a preliminary profile of the skills essential for success in alternative careers.

The empirical study conducted by Ling-Ling Lai (2005) further develops this preliminary profile. Lai, interested in the skills necessary for careers in knowledge management (KM), performed a content analysis of KM job postings. From December 8, 2000 to April 13, 2001, using Lycos, Alta Vista, and Google as well as the websites of headhunters, job banks, and professional organizations, Lai found 27 job postings for full-time, KM positions. For each advertisement, Lai noted the educational requirements, work experience, knowledge and special skills, and software and IT knowledge preferred or required by the employer (p. 353). Lai's analysis revealed that:

- 18.5% of employers prefer/require an advanced degree in LS;
- 48.2% prefer/require an advanced degree in an IT-related discipline or in business (p. 354);
- 63% require several years of work experience in KM, LS, consulting, investment banking, or other IT or business fields (p. 354);
- 25.9% require team work experience;
- 51.9% require excellent communication skills;
- 48.2% require excellent writing skills;
- 48.2% require excellent project management skills (p. 355);
- 29.6% require the ability to "capture, analyze, disseminate and manipulate data and information as it relates to business needs" as well as the ability to "organize, synthesize, and summarize raw information from diverse sources" (p. 356);
- 51.9% require knowledge of KM technical architecture;
- 40.7% require knowledge of KM application development tools (p. 357);
- 100% state that employees will need to "create and promote knowledge sharing/links with knowledge professionals/initiatives" (p. 358);
- 40.7% require "knowledge codification/classification" skills (p. 358).

Based on these results, Lai recommends that LIS programs, if they "would like to react to the job market and prepare well-qualified graduates" (p. 361), should include more technology-oriented courses in the curricula. Lai encourages students to hone their information technology skills and to develop business-appropriate communication styles. Additionally, students should expose themselves to current KM software and systems and

they should understand basic business concepts (p. 361). Finally, like Koenig (1993), Lai encourages LIS programs to develop and engage in inter-disciplinary relationships so as to broaden the scope of LIS education and prepare students for careers in KM (p. 362).

As a supplement to these empirical studies, Sheila Intner (1998) provides an anecdotally-informed description of the "good professional" (p. 48), outlining the skills she considers necessary for librarians to succeed in the 21st century. Intner urges recent LS graduates and practicing librarians to acquire and/or strengthen their ability to meet deadlines, act objectively, shoulder responsibility, keep an open mind, empower staff, and inspire trust (p. 49). Additionally, they should welcome learning from others, seek new ideas, read widely, and experiment (p. 49). This corpus of skills is applicable to LS students and practicing librarians in both traditional and alternative careers, for these competencies are transferable. In her concluding remarks, Intner asserts that "few programs educating new library and information science professionals are preparing their students to function..." in the 21st century (p. 49), a failure that LS programs must address in order to prepare their students for both traditional and alternative careers.

LS EDUCATION AND THE JOB MARKET

The literature examined thus far has informed the present study's research question by confirming the changing nature of librarianship and outlining the set of skills deemed necessary for LS graduates to possess. The next portion of this literature review will consider the evolving employment landscape for LS graduates.

Cronin, Stiffler, and Day (1993) conducted an exploratory study of the emergent job market for graduates of library and information science (LIS) programs. The researchers collected qualitative and quantitative data and used this information to

construct "an impressionistic profile" (p. 3) of the local and national job markets for recent graduates of LIS programs, specifically Indiana University's School of Library and Information Science (SLIS). To determine what alternative careers are available to LIS graduates and what skills and characteristics are required by employers in this emergent market, the researchers used three methods of data collection: they performed content analysis of job ads; they interviewed 33 local, non-traditional information professionals; and they distributed 256 mail surveys to the 1985 and 1988 graduates of Indiana University's SLIS.

The content analysis portion of the study yielded the most generalizable set of results. Over an 18-month period, the researchers tracked the job announcements listed in several local and national newspapers, magazines, and online resources. They identified 360 announcements for non-traditional job openings and they grouped these listings according to standard industrial classification (SIC) code, job title, experience level required or preferred, qualifications required or preferred, and desirable candidate attributes. The researchers discovered that more than half of the employers required or preferred a graduate-level LS (or its equivalent) degree from an accredited institution. The majority of employers also required several years of related work experience and preferred candidates to possess excellent communication and leadership skills and to be flexible, enthusiastic, self-motivating, and team-oriented (p. 7).

To supplement these findings, the researchers interviewed 33 individuals who either occupied alternative positions or who placed others in those types of positions. The content gleaned from the interview sessions indicated that the job market for information professionals is expanding (p. 8). However, "there are significant structural,

manpower, historical, and image problems that will have to be overcome" before LIS programs can place a substantial number of students in these types of positions (p. 9).

Ultimately, the researchers concluded that LIS education is not preparing students for this emergent job market. Careers in non-library settings require a different set of skills, attributes, and orientations than those traditionally emphasized in LIS programs. To succeed in this market, information professionals must possess "subject expertise and business savvy" (p. 11), client-centered attitudes, and more expansive visions of their profession (p. 16). The researchers recommend that LIS programs rework their curricula, combining subject specialty courses with non-library-oriented information management courses (p. 15). As professional opportunities for LS graduates continue to move into the for-profit realm, "experiences and values other than those of academia need to be instilled in students who are considering working in the emerging market" (p. 16).

In addition to the requirements and preferences of employers, the perceptions of LS graduates should also be considered. To elucidate the relationship between LS education and employment satisfaction, Genoni, Exxon and Farrelly (2000) mailed 367 surveys to recent graduates of Curtin University of Technology's Department of Information Studies (p. 246). The researchers received 157 completed surveys and 44 uncompleted surveys; 166 mail surveys were not returned. The survey of recent graduates was divided into three sections: demographic information—age, type of degree obtained; employment history—continuity and type of work; and current employment situation—type of work, type of contract, contribution of the LS degree to their present employment, and the usefulness of the skills acquired during the program (p. 254).

Eighty-seven respondents described the nature of their current work as "librarianship" (p. 249). Seventeen respondents described their current situation as "other information work" and 13 respondents described it as "non-information work." Interestingly, the categories of "other information" and "non-information" work reported the second and third highest numbers of respondents. The researchers did not operationalize the definitions of "other" and "non-information work," so it is difficult to determine the reliability and consistency of the responses; they did, however, ask respondents who selected these categories to describe their work. Six of the 17 respondents who perceived their work as "other information work" actually did work in libraries, "but in positions that did not meet their definition of 'librarianship'" (p. 250). The job descriptions found in this category included knowledge management, information consultant, and youth resource and information broker (p. 250). Similarly, in the "non-information work" category, several of the provided job descriptions suggested that, contrary to the respondents' perceptions of their work, many "were working in areas which would be expected to have a substantial component of information related tasks," such as editing and heritage consulting (p. 250).

In addition to questions about the type of work performed by recent LS graduates, the researchers inquired about the contribution of the LS degree to the obtainment of their current position (p. 254). 64.8% of the respondents described their degree as "essential" to their current work; 15.5% of the respondents described their degree as "not essential, but helped"; and 12.7% described their degree as "irrelevant" (p. 254). To flesh out the respondents' assessment of their degree, the researchers asked about the usefulness of the skills acquired during the program to their current position. Fifty-three respondents

replied that the skills they acquired, which neither the researchers nor the respondents enumerated, were "very useful" to their current work; fifty-three respondents replied that their skills were "moderately useful;" twenty-nine respondents replied that their skills were "occasionally useful;" and four respondents replied that their skills were "irrelevant" (p. 255).

Given the results of their data analysis, Genoni et al. concluded that "respondents continue to report that both their qualification and their skills are relevant to their current employment" (p. 257). The researchers do not breakdown their data sets according to the type of work selected—librarianship, records management, archives, computing and information science, other information work, non-information work (p. 249)—so it is impossible to determine the attitudes of the individuals who classified their work as "other" or "non-information." Despite this limitation, the very inclusion of these categories on the survey suggests that LS researchers recognize the trend toward alternative careers for graduates.

TRENDS IN LS EDUCATION

As evidenced in several of the articles previously discussed, the career opportunities for LS graduates continue to increase and diversify, yet few studies have addressed the extent to which the LS curricula have paralleled these changes. Ray Irwin (2002) and Karen Markey (2004) both tackle this important topic in their assessments of LS educational trends.

Irwin (2002) performed a content analysis of LS course descriptions and titles in order to discern the educational priorities of LIS programs. He compared the online catalog descriptions of 217 mandatory LIS courses to the 12 subjects recommended by

the International Federation of Library Associations (IFLA) in 1976. Irwin identified course themes and concepts and concluded that "mandatory course work in library and information science covers quite well the twelve subjects recommended by IFLA" (p. 179). Irwin's method of analysis, however, assumes that course titles and descriptions accurately reflect course content; that identifiable boundaries exist between all of the subject areas; and that the extent to which a class matches one of the IFLA categories can be consistently determined (p. 178-9).

The course titles and/or descriptions of the 217 classes selected for analysis either implicitly or explicitly referenced each of the twelve subjects, with the concept of "library/librarian(s)/librarianship/libraries" appearing most frequently in course titles (56 times) and course descriptions (166 times) (p. 180). This representation of IFLA's tradition-oriented subject areas seems to demonstrate that LS programs are "holding tightly to roughly the same required course work that sustained...[them]...for a century..." (p. 182), an educational tendency that minimizes the evolving face of librarianship and the changing needs of students.

Like Irwin, Markey (2004) analyzed the websites of 56 ALA-accredited library schools in an effort to identify educational trends, including the "inroads programs are making into new areas and the unique content that programs offer to their students..." (p. 317-318). Markey examined the websites of 56 LS programs, gathering information about courses (descriptions, requirements, electives, and concentrations), degree variety and requirements (courses and credit hours), and dual degree programs (p. 318-319). She found that 41 schools offer certifications in school media; three programs offer certifications in archives and records management; two programs offer endorsements in

medical librarianship; and seven schools offer "other" certifications, such as competitive intelligence, conservation studies, health sciences, information management, law librarianship, museum studies, and new media (p. 329). Competitive intelligence, cultural heritage information, knowledge management, information design, and electronic commerce have all emerged as new themes in the LS curricula (p. 333).

These programs are also re-working the focus of their conventional courses, transforming them into digitally-oriented classes. Information organization courses, for instance, "go beyond the organization of print materials using well-known cataloging standards" to include the organization of digital materials using controlled vocabularies, metadata, and HTML (p. 330). Furthermore, courses dealing with network-based information and systems have begun to supplant courses emphasizing print collections and online databases (p. 331). This tendency mirrors the changes in both traditional libraries and alternative settings. Programs are gradually offering more courses, degrees, and specializations in these non-traditional areas, but LS curricula tend to maintain their adherence to "traditional coursework that seeks greater understanding of users, their information-seeking behavior, and the sources and services that libraries provide to users generally and to specific populations" (p. 338). In contrast to Irwin's study (2002), Markey's examination of LS educational trends suggests that these LS programs are addressing the changing needs of their students.

METHODOLOGY

To answer the research questions posed by this study, the method of content analysis was selected. An unobtrusive research method, content analysis involves the systematic coding and categorization of words, phrases, or concepts according to the parameters of a pre-established and well-defined conceptual framework (Robinson, 2006, p. 1; Babbie, 2004, p. 318). Typically used to analyze social artifacts and human communications (Babbie, 2004, p. 314), this technique allows for the examination of the manifest, or "visible, surface content," as well as the latent, or "underlying meaning," of an artifact or communication (Babbie, 2004, p. 319). Content analysis requires the formulation of operational and conceptual definitions for the words, phrases, or concepts under examination, an activity that generally results in the development of a coding scheme, a codebook, and a coding form (Neuendorf, 2002, p. 50). The effectiveness of this method depends on the researcher's ability to develop a conceptual framework, classify the raw data into the appropriate categories, and conduct a meaningful interpretation and evaluation of the results (Robinson, 2006, p. 1).

JUSTIFICATION OF METHOD SELECTION

The present study selected the method of content analysis for several reasons. First, since job advertisements act as the "relatively accessible indicators of the knowledge, skills and competencies required...by employers" (Kennan, 2006, p. 179), this study concluded that an examination of job postings would highlight the skills

essential for LS graduates interested in alternative careers. An analysis of LS course catalogs would likewise underscore the knowledge, skills, and competencies considered valuable to students by the degree-granting program. Second, the fiscal and human resources needed to survey and interview LS graduates currently working in alternative positions would exceed the scope of this study. Third, qualitative methods, such as face-to-face interviews and surveys, would likely ascertain the individual's perception of the relationship between the knowledge acquired during the program and employment outcome (Genoni, 2000, p. 245), rather than the employer's assessment of the individual's competence. Finally, these qualitative methods could produce un-representative results, since currently unemployed LS graduates might be unwilling to participate or respond (Genoni, 2000, p. 247).

LIMITATIONS OF THE METHOD

Like any research method, content analysis has advantages and disadvantages. The technique is unobtrusive, so the subjects of the study—usually inanimate objects—are rarely affected by the research (Babbie, 2004, p. 324). Content analysis costs less to conduct, since staff and equipment requirements are minimal and study subjects do not require compensation. It generally requires less time to execute content analysis than to perform other types of research and the technique allows for longitudinal, comparative, and cumulative studies (Babbie, 2004, p. 323-324; Robinson, 2006, p. 2). Furthermore, this technique is flexible in its application; it often "extracts further or different findings from material" (Robinson, 2006, p. 2); and the researcher can collect and interpret data when convenient. Finally, because the objects being analyzed can be coded and recoded, the reliability and consistency of the results is increased (Babbie, 2004, p. 324).

Many of these advantages, however, double as disadvantages. The lack of human subjects, for instance, may reduce the financial and human resources needed to conduct the study, but the analysis of artifacts and communications is limited by the subjects' existence and accessibility (Babbie, 2004, p. 324). Since content analysis is restricted to the "examination of recorded communications" (Babbie, 2004, p. 324) and is dependent upon the accurate coding of data, the validity of the results may be questionable. Finally, the identification of an appropriate sample and the development of appropriate categories can be surprisingly difficult tasks.

The researcher does recognize that course offerings constitute only a portion of what LS programs can offer to their students; course content, teaching methods, and access to technologies and professionals are equally valuable contributions (Fisher & Matarazzo, 1993, p. 2). The researcher also acknowledges that job advertisements may not fully articulate the hiring organization's requirements and that catalog descriptions may not accurately reflect the course's content (Irwin, 2004, p. 178-179). Finally, the limited number of job advertisements considered in this study and the small number of states represented render the results of this study extremely-specific and non-generalizable.

DATA COLLECTION AND TREATMENT

Two types of data were collected and analyzed in this study: job advertisements for non-library positions and course descriptions from nine LS programs. The contents of these documents were coded, categorized, and analyzed in order to determine the extent to which LS programs prepare students for alternative careers. The following two

sections of this report describe the methods that were used to locate, code, and interpret these data.

Job Advertisements

To identify a substantial number of relevant job advertisements, the researcher consulted several employment websites and searched for position announcements using a pre-determined vocabulary list (Appendix A). This dictionary of search terms was derived exclusively from the present study's literature review and the researcher's exploratory examination of job advertisements. The variety of job titles and terms precluded the creation of an exhaustive search vocabulary, so this dictionary functioned as a starting point and reference tool. Relevant postings that contained terms similar to those enumerated in the vocabulary list were included in the study.

From February 1 to February 29, 2008, the researcher used the vocabulary terms listed in Appendix A to search the following websites for full-time position announcements:

- American Library Association's JobList (<http://joblist.ala.org/>)
- Career Builder (<http://www.careerbuilder.com>)
- Career Site (<http://www.careersite.com>)
- LIS Jobs (<http://www.lisjobs.com>)
- MSN Careers (<http://msn.careerbuilder.com/>)
- Special Libraries Association (<http://www.sla.org>)
- Wall Street Journal Careers (<http://www.careerjournal.com/>)
- Washington Post (<http://www.washingtonpost.com>)

These websites have been used by several other researchers to locate specific types of job postings (Brimsek, 1991; Cali, 2000; Dellenback, 1999). They cover many employment industries and all regions of the United States, thus ensuring a diverse sample of advertisements, and they are well-populated and frequently visited sites.

For a job announcement to be included in this study, the position advertised had to be a full-time, non-library position in the United States. The position could not require a master's degree in LS, it could not function as a liaison to a public, academic, school, or special library or information center, and it could not use the term "librarian" in the position title or description. If any of these conditions could not be confirmed, the posting was eliminated from the sample population. Duplicate postings, such as ads posted across websites or posted continuously for several weeks, were only counted once.

Once an advertisement had been identified, it was copied into another document and assigned a unique, three-digit identification number. The researcher read through each announcement and highlighted the employer-required degrees, qualifications, skills, knowledge areas, and experiences; the data collection sheet for job advertisements (Appendix B) was used to capture this information. During this process of data collection, ideas about appropriate categories were inductively developed and refined. The researcher formulated a list of tentative categories and referred to several previous studies (Dellenback, 1999; Gash & Reardon, 1988; Glackin, 1999; Guise et al., 1997) to assist with the development of appropriate titles. Using this technique, the researcher developed four categories of skills: interpersonal, LS-degree related, technical, and transferable. These skill categories were defined as follows:

- Inter-personal: category of personal skills dealing with the interactions between individuals
- LS-degree related: category of skills dealing with the functions traditionally associated with the profession of librarianship
- Technical: category of skills dealing with the development, administration, and use of information technology
- Transferable: category of skills dealing with general, context-independent, business functions

The researcher iteratively developed these categories and created a codebook to assist with the coding of job advertisements (Appendix C). Once all of the postings had been examined and coded at least once, the researcher revisited the job ads to ensure that all data had been captured and appropriately and completely classified and coded. These categories were then transferred to a spreadsheet so as to facilitate comparison with the LS course descriptions.

LS Programs

Due to time and resource constraints, the researcher could not conduct an exhaustive analysis of the course catalog of every ALA-accredited LS program in the United States. Therefore, the researcher used the 2008 graduate school rankings published by *U.S. News and World Report* as the starting point for the development of this study's list of programs to consider. Twelve programs are included in this ranking; the researcher currently attends the University of North Carolina at Chapel Hill, so this program was eliminated from the sample population. To determine the suitability of the remaining 11 programs, the researcher visited each program's website to confirm that (1) it offered a master's degree in library science, not a specialization or concentration; (2) it provided detailed descriptions of its courses online; and (3) it somehow addressed, through its curriculum, issues and trends emergent in the field of library science. Using these criteria, the researcher selected for inclusion in this study the LS programs offered by the following institutions:

- Catholic University
- Florida State University
- Rutgers University
- Syracuse University
- University of Illinois at Urbana-Champaign

- University of Maryland
- University of Texas at Austin
- University of Washington
- University of Wisconsin at Madison

The course catalogs for these nine LS programs were retrieved from each program's website. The description of every full credit, graduate-level, LS course was read and analyzed and the skills and competencies mentioned in each description were highlighted and, if necessary, annotated. The availability of dual-degree programs, degree specializations and concentrations, inter-disciplinary coursework, and field studies was noted on the data collection sheet for LS programs (Appendix D). The researcher coded the course descriptions using the categories of skills iteratively developed for the job advertisements; the number of courses mentioning each skill was then tallied on a spreadsheet.

INSTRUMENTS

Two data collection sheets were created to collect and organize the data and standardize the coding process. Appendices B and D are the data collection sheets for the job advertisements and the LS programs. Cali's thesis (2000) and Gash and Reardon's (1988) study were used to develop these forms.

Appendix B – Data Collection Sheet for Job Postings

The job advertisement collection sheet was completed for each posting included in this study. To ensure that duplicate postings were only counted once, the first section of the sheet captured the source information of the announcement, including the website that provided the posting as well as the date of the posting. The second section recorded the name of the hiring organization as well as its location and type (for-profit, non-profit,

or cannot be determined). The third section of the sheet recorded the position title as well as the industry of the hiring organization. The five remaining sections of the sheet captured the position requirements: the level and subject area of the degree(s) required; the degree specializations, concentrations, or certifications required; the years and types of experience required; the knowledge areas required; and the types of skills required by the employer.

As previously mentioned, the skill requirements were sub-divided into four categories: inter-personal, LS-degree related, technical, and transferable. Within these categories, the skills were arranged alphabetically and assigned a number, starting with 1 and progressing upward to 54. The researcher developed these categories to assist with the organization of data; furthermore, the classification of skills into these broader categories allowed for a more general analysis of the data.

Appendix D – LS Program Information

This sheet captured information regarding each LS program. More specifically, the sheet recorded the name of the program, the name of the university offering the program, and the URL address for the program's website. The sheet also captured the name of the degree, the types of dual-degree programs offered, the types of degree specializations, concentrations, or certifications offered, and the availability of field experiences. The researcher gathered this information in order to develop a more holistic understanding of each LS program, since course offerings constitute only a portion of what LS programs can offer to their students.

RESULTS

The present study undertook an examination of 55 job advertisements and 488 course descriptions in order to determine the extent to which LS programs prepare students for alternative careers. The following sections present the results of this analysis.

JOB ADVERTISEMENTS

Fifty-five job advertisements were collected. Of this total, 44 advertisements were posted by for-profit organizations, 6 were posted by non-profit organizations, and 5 were posted by organizations of unknown profit status. Organizations in the business industry (e.g., accounting and consulting firms) posted the highest number of advertisements (16), followed by science (8), healthcare (6), and law (5). Table 1 (p. 26) shows the industry distribution of hiring organizations. These statistics seem to support the Bureau of Labor Statistics' projection that opportunities for librarians outside of traditional settings will grow the most between 2006 and 2016 (*Occupational Outlook Handbook*, 2008, p. 3).

Table 1 – Industry Distribution

Industry	Number of advertisements
Business	16
Science	8
Healthcare	6
Legal	5
Government	3
Public relations	2
Academic	1
Engineering	1
Information technology	1
Insurance	1
Marketing	1
Media	1
Museum	1
Publishing	1
Real Estate	1

The job postings included in this content analysis cover 16 states and the District of Columbia. Organizations in the Washington, D.C. metropolitan area posted the highest number of job advertisements (13), followed by New York (6) and Massachusetts (5). Table 2 (p. 26-27) shows the geographic distribution of the postings. Given the study's small sample population, however, the researcher cannot claim any correlation between geographic location and employment opportunities.

Table 2 – Geographic Distribution

Geographic Location	Number of advertisements
Washington, D.C. metropolitan area	13
New York	6
Massachusetts	5
Illinois	3
Connecticut	2
Florida	2
Maryland	2
North Carolina	2
Wisconsin	2
California	1
Michigan	1
Minnesota	1
Missouri	1

New Jersey	1
New Mexico	1
Ohio	1

The position titles provided in the 55 job advertisements tend to be general, rather than industry- or company-specific. Position titles encountered in this content analysis include:

- Competitive intelligence director
- Database specialist
- Knowledge management analyst
- Information specialist
- Records manager
- Research assistant/associate/coordinator

More specific position titles include:

- Coding research analyst
- Health information management director
- Investigative research analyst
- Market research and competitive intelligence analyst
- Media research analyst
- Tax information specialist

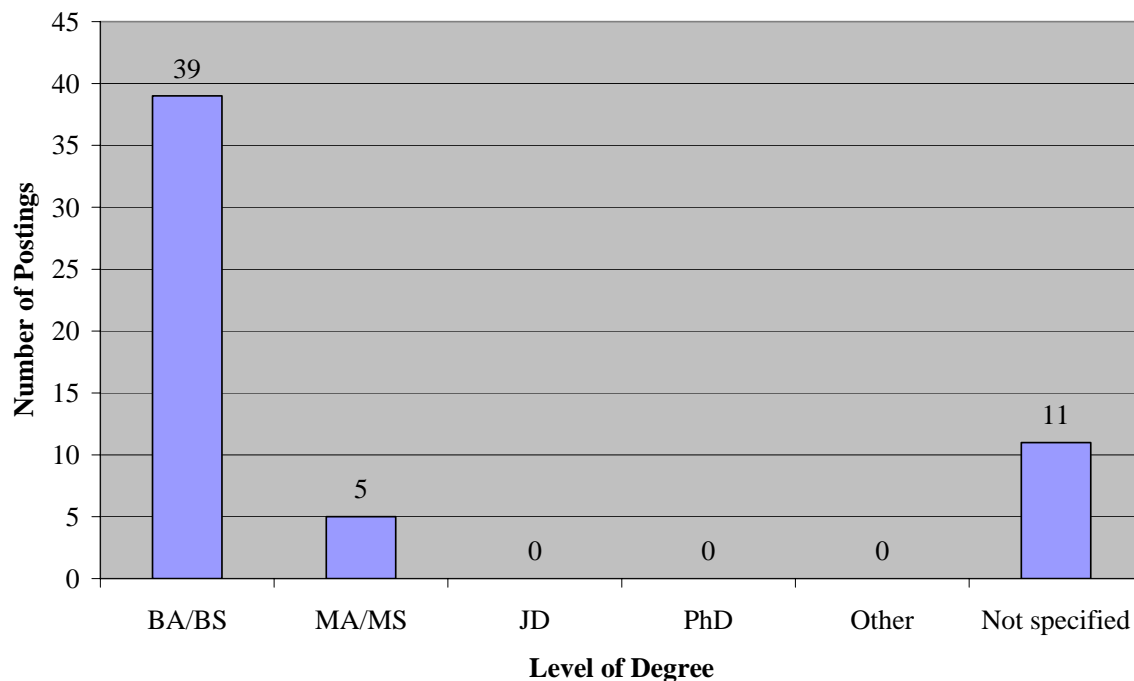
The term "specialist" occurs most often (12 times), followed by "manager" (10 times), "analyst" (8 times), and "associate" (5 times) (Table 3, p. 28). Position types often include information-related terms; "research," for instance, is listed in 12 advertisements, "information" is listed in 7 advertisements, and "competitive intelligence" and "knowledge management" are each mentioned in 4 advertisements. The presence of these information-specific terms in almost one-half (27) of the job postings indicates that organizations in these alternative settings are looking to hire individuals with "knowledge-intensive" skills (Hunt, 1995, p. 5).

Table 3 – Frequency of Occurrence, Position Functions

Term	Frequency of Occurrence
Specialist	12
Manager	10
Analyst	8
Associate	5
Assistant	3
Director	3
Researcher	3
Administrator	2
Coordinator	1
Designer	1
Developer	1
Indexer	1
Technician	1

Educational Requirements

Educational requirements are specified in 44 of the 55 job advertisements: 39 postings require a bachelor's degree and 5 postings require a master's degree (Figure 1, p. 29). Twelve of these 44 postings prefer, but do not require, a master's degree in library science.

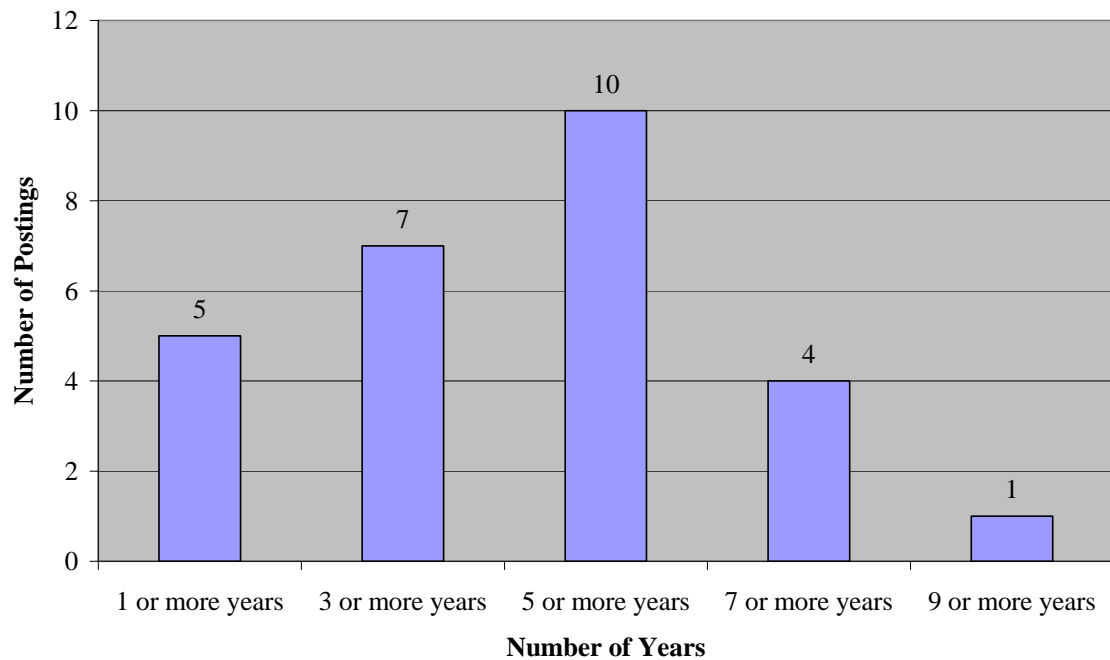
Figure 1: Degrees

Business (7 postings), information and library science (5 postings), and science (4 postings) are the three most frequently required degree subject areas. Computer science, engineering, mathematics, and social science are each required in 2 job advertisements (total of 8 postings); communications, education, health information management, information systems, journalism, and music are each required in 1 job advertisement (total of 4 postings). In total, 21 advertisements require a subject-specific degree, 7 advertisements require an information-specific degree, and 27 postings do not specify the degree level or type. These results suggest that LS graduates would most likely satisfy the educational requirements listed for these positions.

Experience Requirements

Of the 55 job advertisements selected, 28 do not require industry-specific experience, 20 do require industry-specific experience, and 7 do not specify. Figure 2 shows the number of years of experience (industry and non-industry) required by employers. These results indicate that most employers prefer the range of 3 to 5 or more years of experience; however, since only 27 postings specify an experience requirement, it is difficult to form any conclusions.

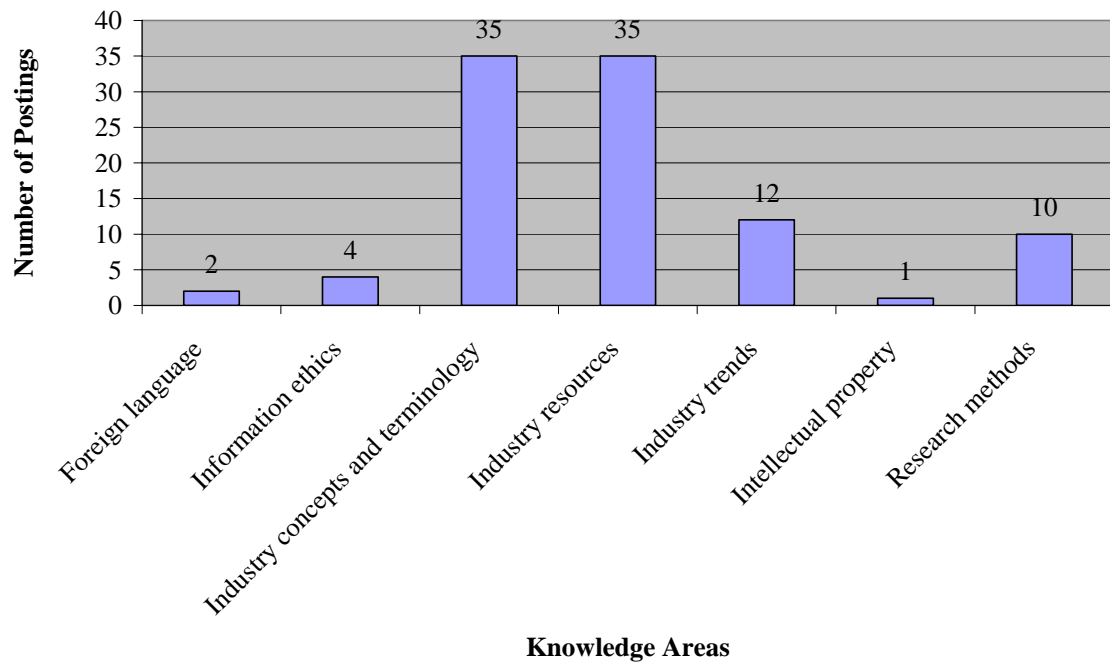
Figure 2: Years of Experience



Knowledge Area Requirements

Knowledge of industry concepts and terminology (35 job postings), industry resources (35 job postings), and industry trends (12 postings) are the three most frequently required knowledge areas. As Figure 3 shows, knowledge of intellectual property (1 posting) and knowledge of a foreign language (2 postings) are the two least frequently required knowledge areas. These results indicate that organizations are looking to hire graduates with industry-specific knowledge.

Figure 3: Knowledge Areas

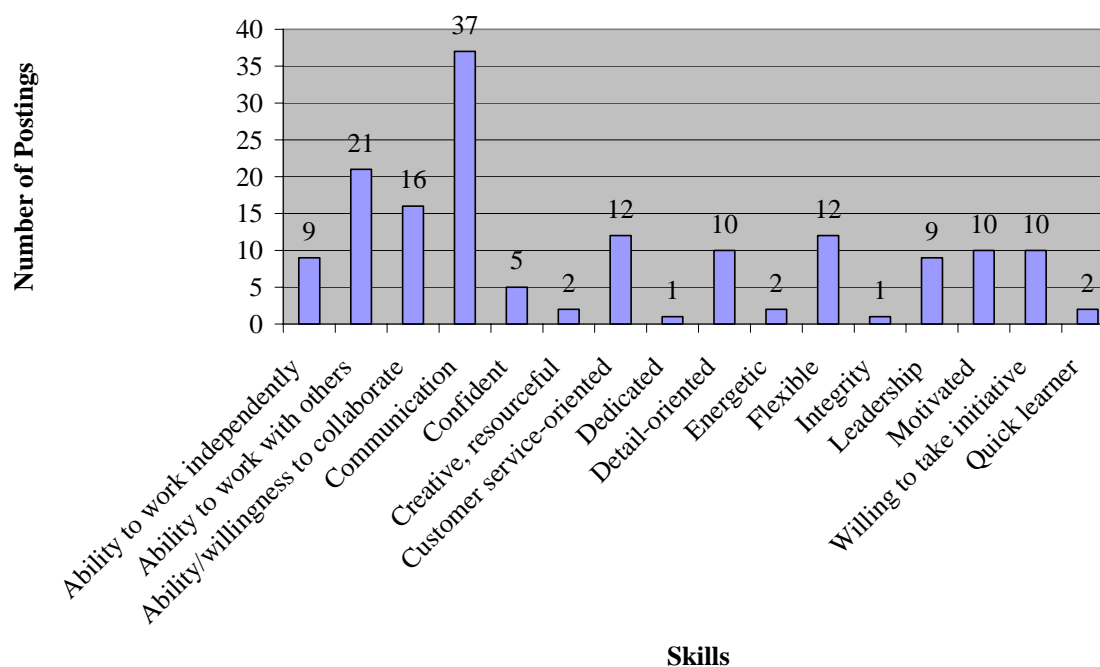


Skill Requirements

At the category level, transferable skills are required most often (247 times), followed by interpersonal skills (159 times), LS-degree related skills (80 times), and technical skills (67 times). More specifically, communication skills are required most often (67.27% of employers), followed by analytical skills (54.55% of employers) and proficiency with personal computer applications (50.91% of employers).

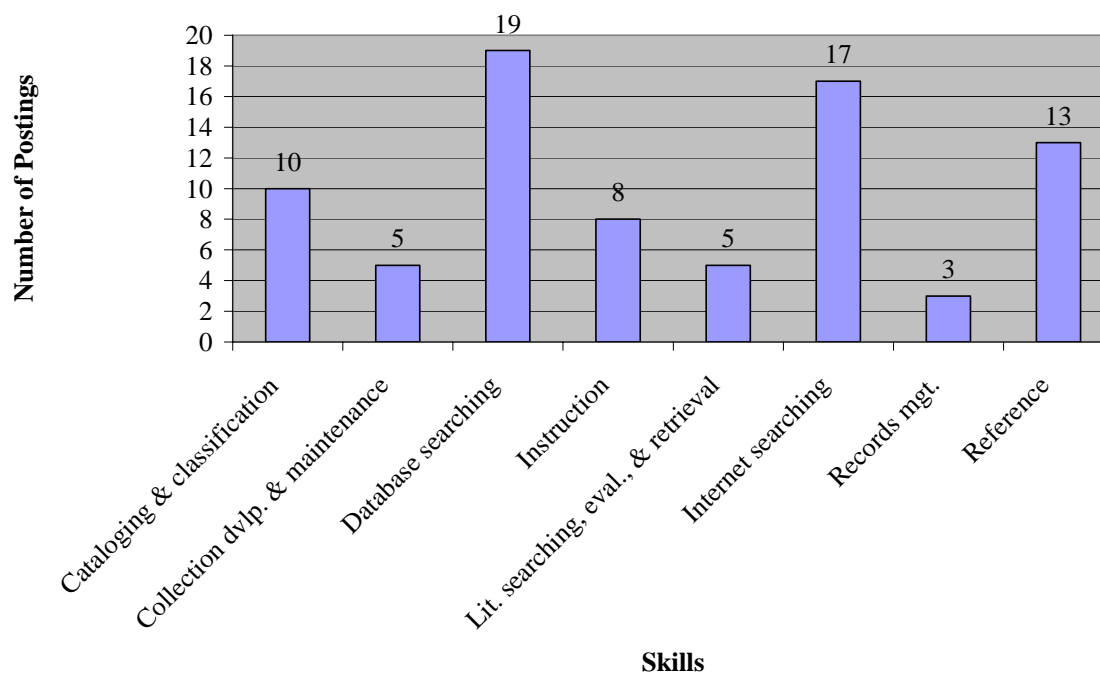
As previously noted, communication skills are the most frequently required interpersonal skill; 37 of the 55 postings explicitly require excellent written and verbal communication skills. In general, the more external, demonstrable skills—communication, teamwork, customer service-orientation—are required more often than the internal, individually-based skills—dedication, integrity, creativity, and quick learning speed. Figure 4 presents these results.

Figure 4: Interpersonal Skills



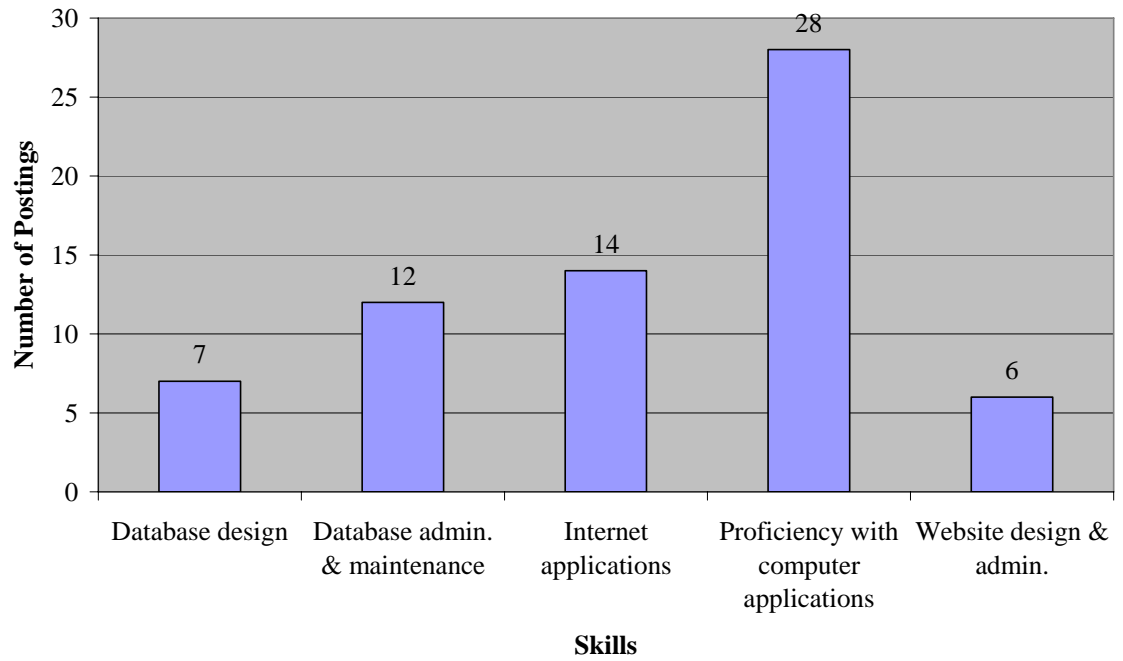
In the LS-degree related skills category, database searching skills (19 postings) and internet searching skills (17 postings)—perhaps the most transferable skills in this category—are required most often. Records management (3 postings), collection development and maintenance (5 postings), and literature searching (5 postings) are the least frequently required skills. Figure 5 shows the distribution of these skills.

Figure 5: LS-Degree Related Skills



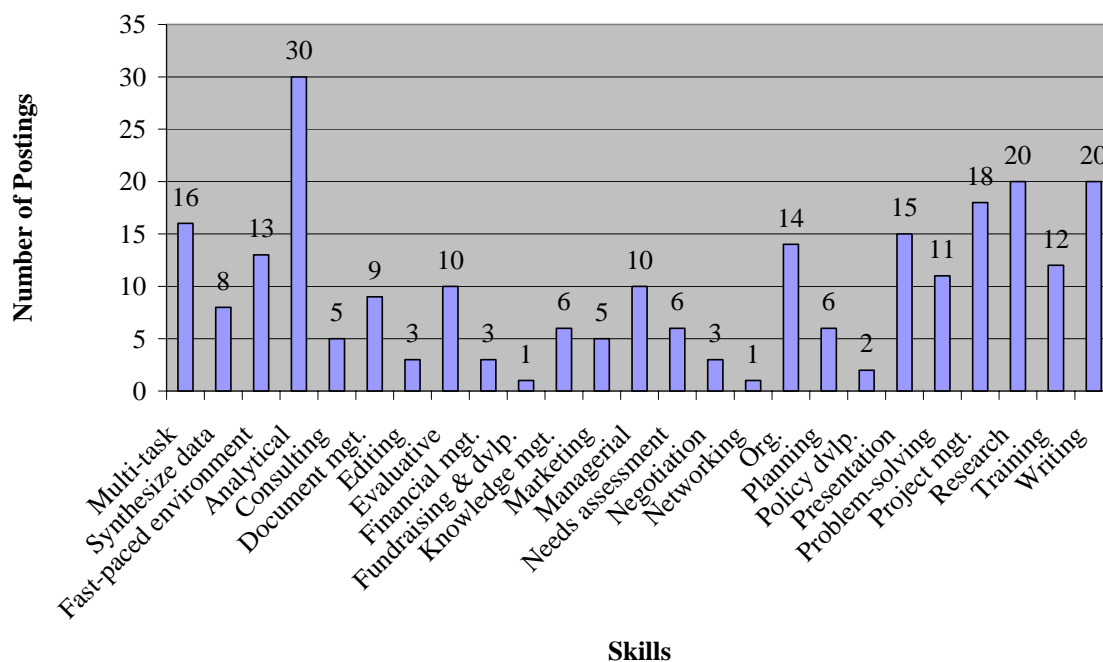
Not surprisingly, given the continued proliferation of information technology, 28 of the 55 job postings require candidates to be proficient in the use of basic computer applications. Figure 6 presents these results.

Figure 6: Technical Skills



In the category of transferable skills, employers most often require strong analytical skills (30 postings), followed by research (20 postings), writing (20 postings), and project management (18 postings). The ability to multi-task is required in 16 advertisements and the ability to present information effectively is required in 15 advertisements. The least frequently required skills include fundraising and development (1 posting), networking (1 posting), and policy development (2 postings). Figure 7 shows the distribution of transferable skills.

Figure 7: Transferable Skills



The present study's content analysis of job advertisements indicates that the majority of employers are looking to hire individuals who possess:

- a bachelor's degree in an applicable subject area;
- 3 to 5 or more years of experience;
- knowledge of industry concepts and terminology and industry resources;
- excellent oral and written communication skills;
- strong analytical skills; and

- proficiency in the use of personal computer applications.

LS PROGRAMS

In addition to conducting a content analysis of job advertisements, the present study examined the online course catalogs of nine ALA-accredited LS programs. The data collection sheet for LS programs (Appendix D) collected information about the program awarding the degree, including the degree name, the types of dual-degree programs offered, the types of degree specializations, concentrations, or certifications offered, and the availability of field experiences. This information is presented in Table 4 (p. 38-39).

Degree Names

Four programs use the more encompassing phrase "library and information science" in the degree title, three programs use the traditional term "library science," one program (the University of Texas at Austin) uses the more expansive term "information studies," and one program (the University of Illinois at Urbana-Champaign) uses the general term "science." This diversity of degree names perhaps stems from each program's attempt to address the continued expansion of the practice of librarianship.

Dual-Degree Programs

The availability of dual-degree programs at 6 of the 9 universities seems to suggest a more inter-disciplinary approach to LS education. Five programs offer joint degrees in traditional subject areas, such as law, history, and the humanities. Two programs offer unique dual-degree programs: the University of Washington offers a LS program for lawyers and other individuals already in possession of a law degree and the

University of Texas at Austin offers degrees in information studies and women's and gender studies or Middle Eastern studies.

Degree Specializations

All 9 programs offer degree specializations, concentrations, and/or certifications. Rutgers University, for instance, offers a certification in information security and management; the University of Maryland offers a concentration in e-government; and the University of Wisconsin at Madison offers a specialization in digital libraries and resources. The availability of these degree concentrations seems to serve as an acknowledgement of the increasing need for area specializations and subject expertise.

Table 4 – LS Program Information

Program	Degree	Dual-degree programs	Degree Specializations	Field Experiences
Catholic (42 coded courses)	MLS	<ul style="list-style-type: none"> • JD/MLS • MA/MS in history, biology, musicology, english, or religious studies 	<ul style="list-style-type: none"> • School library and media services 	Yes
FSU (46 coded courses)	MLS	<ul style="list-style-type: none"> • JD/MLS 	<ul style="list-style-type: none"> • School library media specialist certification • Concentrations in (1) information needs and services, (2) youth information needs and services, (3) information architecture and technology, and (4) general librarianship • Certifications in (1) leadership and management, (2) museum studies, (3) reference services, (4) school library media leadership, (5) web design, and (6) youth services 	Yes
Rutgers (50 coded courses)	MLIS	None	<ul style="list-style-type: none"> • School library media 	Yes
Syracuse (48 coded courses)	MLIS	None	<ul style="list-style-type: none"> • Certifications in (1) school media, (2) information systems and telecommunications management, (3) information security management, and (4) digital libraries 	Yes

Table 4 – LS Program Information

Program	Degree	Dual-degree programs	Degree Specializations	Field Experiences
UIUC (93 coded courses)	MS	None	<ul style="list-style-type: none"> • Specializations in (1) biological informatics, (2) digital curation, (3) community informatics • Certifications in (1) K-12 library information, (2) digital libraries, (3) special collections, (4) advanced study 	Yes
UMD (57 coded courses)	MLS	<ul style="list-style-type: none"> • MA/MS in history 	<ul style="list-style-type: none"> • Specializations in (1) archives, records, and information management and (2) school library media • Concentrations in (1) e-government and (2) lifelong access 	Yes
UT at Austin (72 coded courses)	MSIS	<ul style="list-style-type: none"> • MA/MSIS in Women's and Gender Studies • MA/MSIS in Middle Eastern Studies 	<ul style="list-style-type: none"> • Certificate of advanced study in (1) conservation of library and archives materials and (2) preservation administration of library and archive materials • Certification in school library media 	Yes
U of Washington (46 coded courses)	MLIS	<ul style="list-style-type: none"> • Law MLIS 	<ul style="list-style-type: none"> • Library media endorsement • Certification in law librarianship 	Yes
UW at Madison (40 coded courses)	MLIS	<ul style="list-style-type: none"> • JD/MLIS • Open to pursuance of other joint degrees 	<ul style="list-style-type: none"> • Specializations in (1) school library media, (2) archives administration, and (3) digital libraries and resources 	Yes

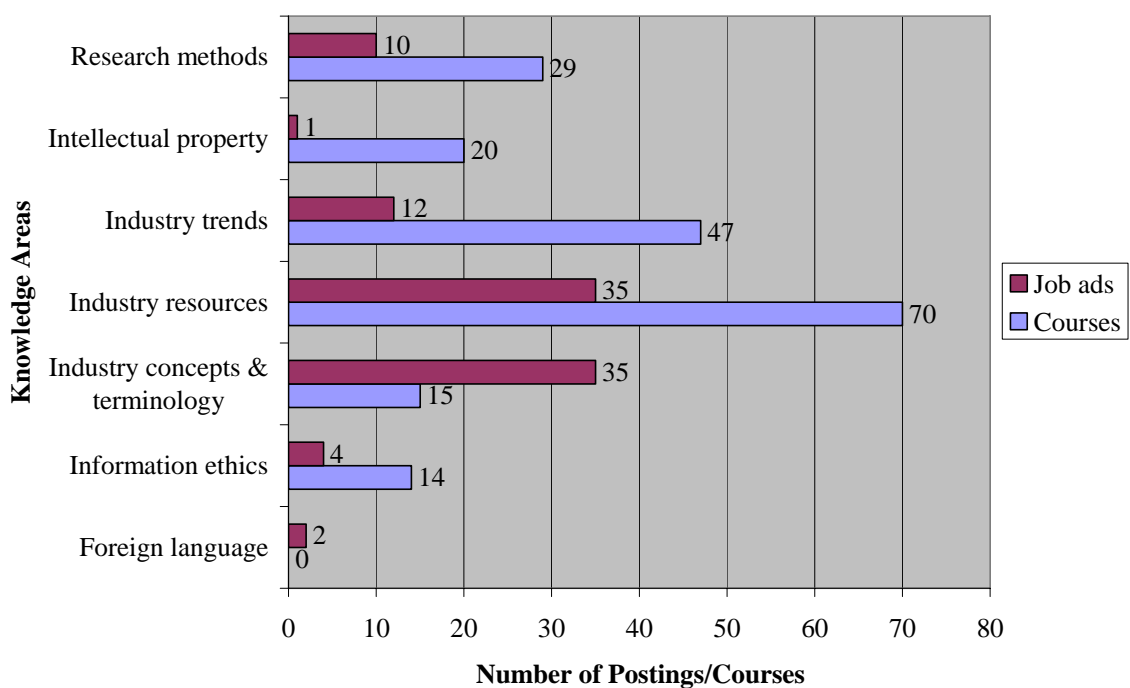
LS COURSE OFFERINGS

A total of 488 course descriptions were collected, analyzed, and coded. The results of this analysis indicate that LS course descriptions most frequently address the knowledge areas of industry resources (70 courses) and industry trends (47 courses) and the category of transferable skills (mentioned 513 times). These results largely correspond to the requirements listed in the 55 job advertisements.

Knowledge areas

LS programs provide the greatest number of courses on the topic of industry resources (70 courses). Industry trends is addressed in 47 courses and industry concepts and terminology—the knowledge area most frequently required by employers—is mentioned in 15 course descriptions. As Figure 8 (p. 41) demonstrates, the course descriptions adequately cover the topics of research methods, intellectual property, industry trends, industry resources, and information ethics.

Figure 8: Comparison of Knowledge Areas

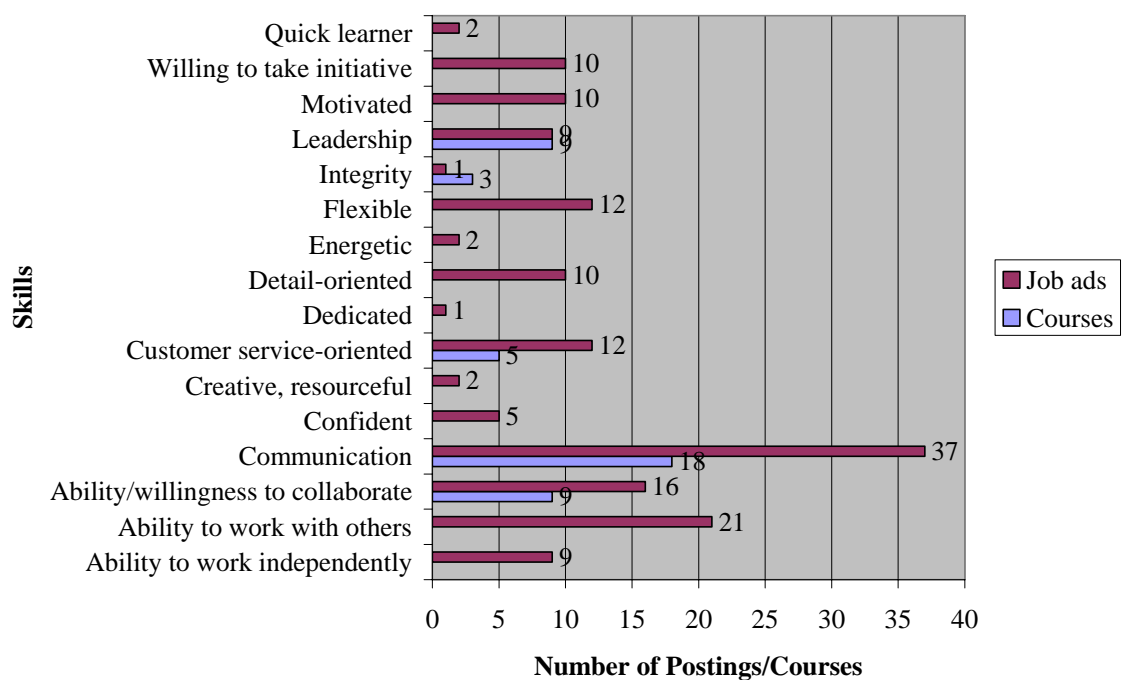


Skills

LS course descriptions address the category of transferable skills most often (513 times), a result that corresponds to employers' requirements. Not surprisingly, LS-degree related skills are the second most frequently addressed skill area (236 times), followed by technical skills (86 times) and interpersonal skills (44 times).

In the category of interpersonal skills, communication skills are mentioned most frequently in LS course descriptions (18 out of 488 courses; 3.69%) (Figure 9, p. 42). Because interpersonal skills are usually acquired and honed through experience, rather than taught or learned directly, the researcher concludes that a truly accurate assessment of this skill area would require qualitative surveys of current LS students and recent LS graduates.

Figure 9: Comparison of Interpersonal Skills



All 9 LS programs provide ample coverage of each LS-degree related skill (Figure 10, p. 43). The most frequently mentioned skills include cataloging and classification (57 courses), collection development and maintenance (42 courses), and reference (32 courses). The least frequently addressed skill is literature searching, evaluation, and retrieval; only mentioned in 1.43% of courses (7), the skill is still more than adequately covered.

Figure 10: Comparison of LS-Degree Related Skills

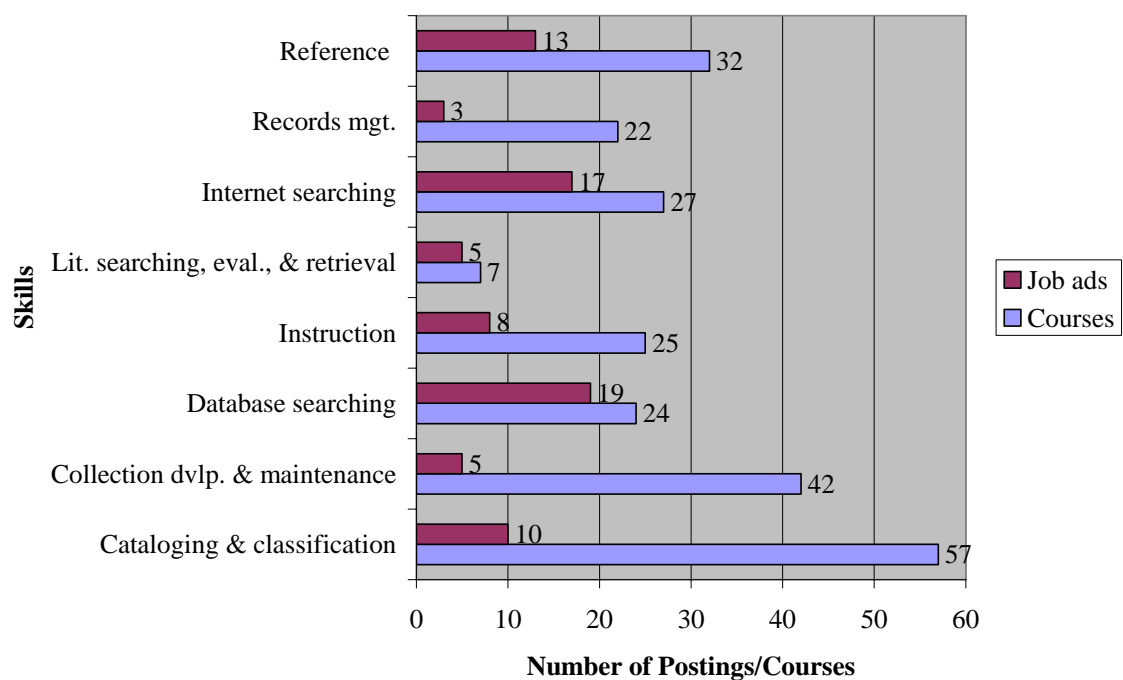
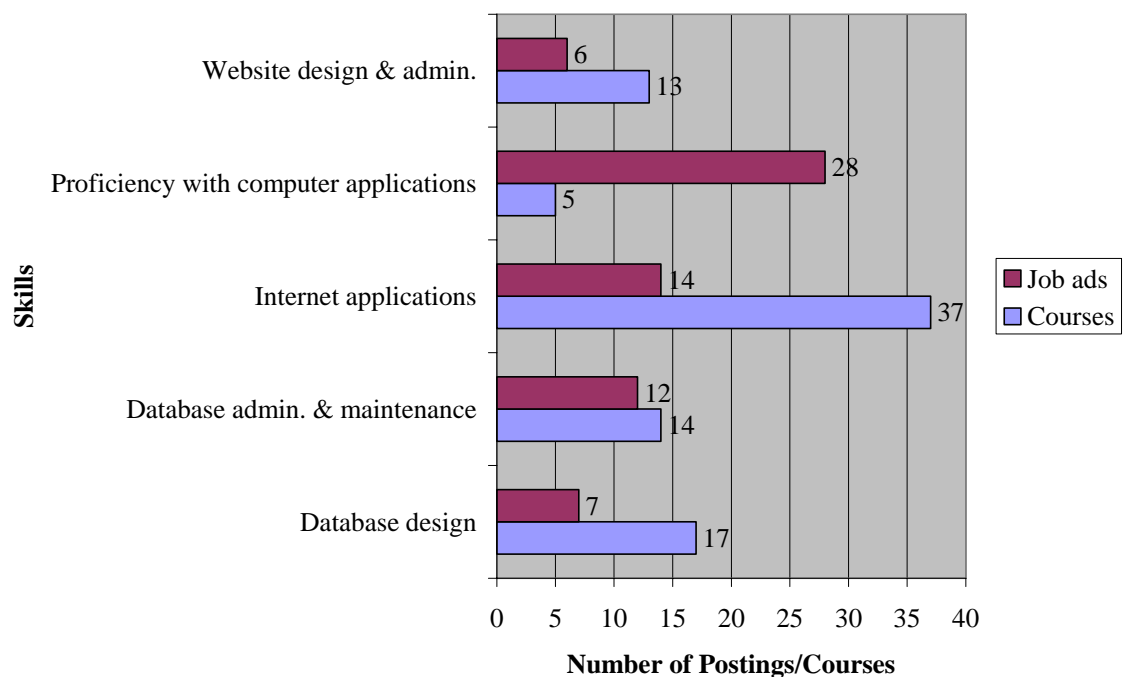


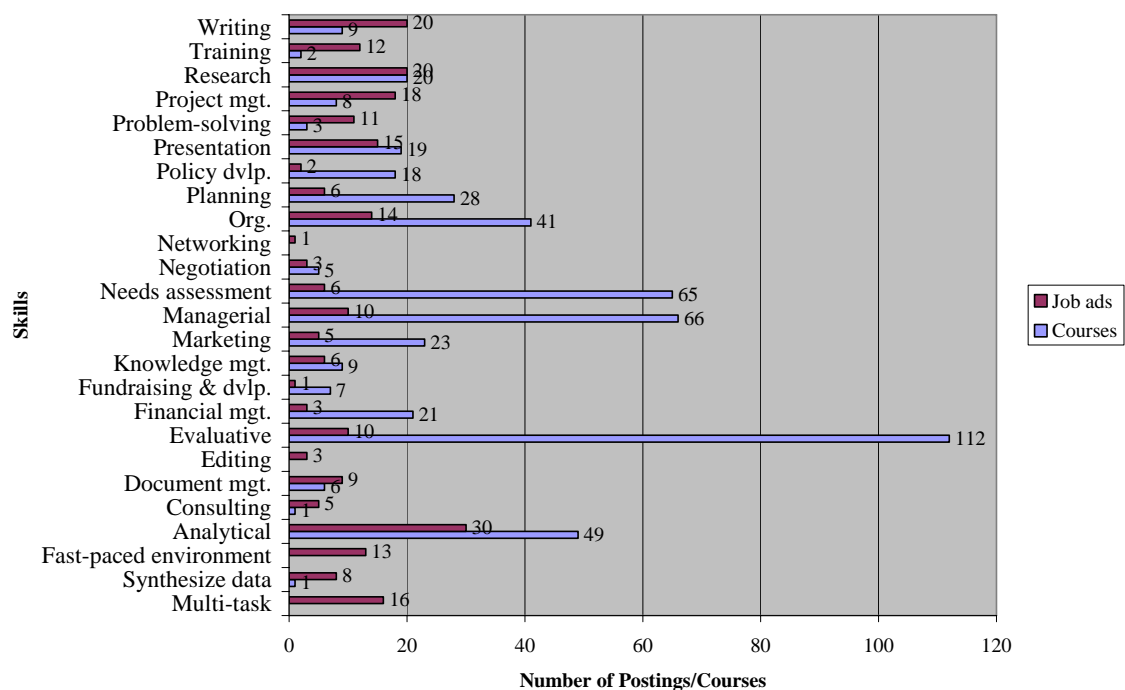
Figure 11 (p. 44) compares the number of job advertisements requiring the specific technical skill and the number of courses mentioning the topic. Figure 11 seems to indicate that LS programs adequately address four of the five skill areas and fail to provide sufficient course coverage of the most frequently required skill—proficiency with computer applications. The researcher notes, however, that this skill is a prerequisite for all of the advanced technical courses; therefore, the researcher concludes that LS programs adequately address all of these technical skills.

Figure 11: Comparison of Technical Skills



In the category of transferable skills, evaluative skills are addressed most frequently in course descriptions (112 courses). Managerial (66 courses), needs assessment (65 courses), analytical (49 courses), and organizational skills (41 courses) are also frequently mentioned (Figure 12, p. 45).

Figure 12: Comparison of Transferable Skills



The results of this content analysis indicate that the nine LS programs examined in this study are addressing the knowledge areas and skills required by employers and, thus, are preparing students for employment in alternative settings.

IMPORTANCE & IMPLICATIONS OF THE STUDY

As mentioned in the introduction, the proliferation of digital technology in the workplace has impacted the employment destinations of LS graduates. In today's information-intensive society, private sector businesses seek and generate enormous amounts of digital information; consequently, many employers are looking to hire information literate individuals who can find, synthesize, and manage information and knowledge. LS graduates have begun to fill this employment niche, but few studies have assessed the extent to which LS programs prepare students for these alternative positions. In response to this research deficiency, the present study conducted a content analysis of job advertisements and LS course descriptions in order to determine the extent of the overlap between employer preferences and LS courses. By highlighting the skills required by employers and the courses offered by selected programs, this study aims to generate discussion about the evolution of the profession and, in the process, to contribute to a more informed understanding of the emergent job market for LS graduates.

More specifically, by encouraging discourse about employer requirements and LS curricula, this research topic hopes to have implications for students, practitioners, professional bodies, LS educators, and program administrators. By ascertaining the skills required by employers, recent graduates can better prepare themselves for employment in this emergent job market. Furthermore, this profile of preferred skills will perhaps motivate practicing librarians to assess the practical worth of their LS degree and

encourage professional bodies to update their accreditation standards so as to reflect the evolving nature of librarianship (Irwin 2002).

This research topic will also affect LS educators and program administrators, who have a responsibility to prepare students for employment. If, as Markey (2004) notes, "faculty are the key to making change" (p. 336), it is imperative that LS educators and administrators empirically assess the extent to which their individual programs prepare students for alternative careers. By consulting the published literature, conducting empirical research, and "maintaining a current awareness of job trends..." (Weech & Konieczny, 2007, p. 74), LS faculty and administrators can promote change and, in the process, provide a first-rate education to LS students and prepare graduates for careers in both traditional and alternative settings.

SUMMARY & CONCLUSIONS

The proliferation of information technology in private sector businesses has increased and diversified the employment opportunities for graduates of LS programs; however, few published studies have undertaken empirical assessments of the reaction of LS programs to this employment trend. In response to this deficiency, the present study conducted a content analysis of job advertisements and course descriptions in order to ascertain the skills required by employers in alternative settings and to determine the extent to which LS programs are preparing recent graduates for alternative careers.

During a one-month period, the researcher collected 55 job advertisements from eight employment websites. For each advertisement, the employers' requirements were identified and recorded (Appendix B), appropriate skill categories were iteratively developed, and the job postings were analyzed, classified, and coded. The skills extracted from these advertisements were transferred to a spreadsheet and compared to the skills mentioned in the 488 course descriptions retrieved from the online course catalogs of nine ALA-accredited LS programs. The skills mentioned in each collection of artifacts were then compared in order to determine the extent of the overlap between the skills required by employers and the skills addressed by LS programs.

In conducting this content analysis, the researcher determined that LS programs are offering more courses, degrees, and specializations in emerging and non-traditional subject areas. However, as Karen Markey discovered in her content analysis of course descriptions, LS programs tend to maintain their curricular adherence to "traditional

coursework that seeks greater understanding of users, their information-seeking behavior, and the sources and services that libraries provide to users generally and to specific populations" (Markey, 2004, p. 338). The present study, like Markey's examination of LS educational trends, concludes that these LS programs are beginning to address the changing needs of their students and are adequately preparing graduates for employment in alternative settings.

By performing an empirical assessment of job advertisements and course descriptions, the present study has contributed to a more holistic understanding of the changing employment landscape, the needs of employers and students, and the educational offerings of LS programs. The present study's limited sample populations and time and resource restraints render the results of this content analysis extremely specific and non-generalizable. Therefore, the researcher recommends that a qualitative analysis of the students' and practitioners' perspective be conducted in order to supplement the results of the present study and, by inspiring discourse, better prepare students for both alternative and traditional careers.

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APPENDIX A: VOCABULARY LIST

The following terms were used to locate relevant job postings:

- administrator
- analyst
- architect
- broker
- consultant
- developer
- director
- leader
- liaison
- manager
- professional
- researcher
- specialist
- supervisor

The following terms were used in combination with the terms listed above to narrow search results:

- biotech
- business
- clinical
- competitive intelligence
- content
- database
- health
- information
- intelligence
- IT
- knowledge
- legal
- market
- medical
- pharmaceutical
- project
- records
- research
- science
- systems

APPENDIX B: DATA COLLECTION SHEET FOR JOB ADVERTISEMENTS

Position ID number: 0xx

SOURCE INFORMATION

Website supplying the posting:

Date of the posting: MM/DD/YY

EMPLOYER INFORMATION

Name of hiring organization:

Location of the position:

Type of organization: For-profit Non-profit Unable to determine

POSITION INFORMATION

Position title:

Industry:

DEGREE REQUIREMENTS

Level of degree required:

BA/BS MA/MS JD PhD Other Not specified

Subject area of degree required:

Required degree specializations, concentrations, or certifications:

MLS degree preferred: Yes No

EXPERIENCE REQUIREMENTS

Number of years:

Industry-specific experience: Yes, please specify: No Not specified

KNOWLEDGE AREA REQUIREMENTS

- | | |
|--|--|
| <input type="checkbox"/> Foreign language | <input type="checkbox"/> Information ethics |
| <input type="checkbox"/> Industry concepts and terminology | <input type="checkbox"/> Intellectual property |
| <input type="checkbox"/> Industry resources | <input type="checkbox"/> Research methods |
| <input type="checkbox"/> Industry trends | |

SKILL REQUIREMENTS

Interpersonal (numbers 1 to 16):

LS-degree related (numbers 17 to 24):

Technical (numbers 25 to 29):

Transferable (numbers 30 to 54):

APPENDIX C: CODEBOOK FOR JOB ADVERTISEMENTS

Unit of Data Collection: Individual job advertisements for full-time positions in non-library settings.

Position ID: Fill in the advertisement's ID number, beginning with 001 and proceeding upward.

Source Information: Provide the name of the website supplying the posting as well as the date the advertisement was posted.

Employer Information: Provide the name of the hiring organization, the location of the position (city and state), and the type of organization (for-profit, non-profit, unable to determine).

Position Information: Give the position title and organizational setting (industry).

Degree Requirements: Indicate the level and subject area of the degree required by the employer.

1. **BA/BS:** candidate must have a bachelor's degree.
2. **MA/MS:** candidate must have a master's degree.
3. **JD:** candidate must have a law degree.
4. **PhD:** candidate must have a PhD.
5. **Other:** candidate must have a type of degree not included in this list (please specify).
6. **Not specified:** employer does not specify the type of degree required.

Also, indicate the level and type of any degree concentrations, specializations, or certifications required by the employer.

Finally, indicate whether the employer prefers that the candidate has a master's degree in library science.

Experience Requirements: Indicate the number of years of experience required by the employer as well as the type of experience required.

1. **Industry experience:** candidate must have employment experience in a specific industry, environment, or setting (please specify).
2. **Non-industry experience:** candidate does not need employment experience in a specific industry, environment, or setting.
3. **Not specified:** employer does not specify the type of employment experience required.

Knowledge Area Requirements: Indicate the type of knowledge required by the employer.

1. **Foreign language:** candidate must be proficient in a foreign language.
2. **Information ethics:** candidate must have knowledge of confidentiality and privacy issues as they relate to information access and use.
3. **Industry concepts and terminology:** candidate must be familiar with industry-specific concepts, subjects, processes, and terminology.
4. **Industry resources:** candidate must be familiar with industry-specific documents and information resources (i.e., websites, databases).
5. **Industry trends:** candidate must have knowledge of emerging developments and trends in a specific industry.
6. **Intellectual property:** candidate must have knowledge of copyright, patent, and/or trademark law and its implications for information use.
7. **Research methods:** candidate must have knowledge of research methods and techniques.

Skill Requirements: Indicate the types of skills required by the employer.

Interpersonal: category of personal skills dealing with the interactions between individuals. The following phrases indicate interpersonal skills:

1. ability to work independently
2. ability to work with others
3. ability/willingness to collaborate
4. communication (written and oral)
5. confident
6. creative, resourceful
7. customer service-oriented (support and engage customers; maintain client relationships; strong customer bias)
8. dedicated
9. detail-oriented
10. energetic
11. flexible
12. integrity (committed to ethical standards)
13. leadership (ability to motivate others; decision-making)
14. motivated
15. willing to take initiative
16. quick learner

LS-degree related: category of skills associated with the LS degree and the practice of librarianship. The following phrases indicate library-specific skills:

17. cataloging and classification
18. collection development and maintenance
19. database searching
20. instruction (instructional design)

21. literature searching, evaluation, and retrieval
22. internet searching
23. records management
24. reference

Technical: category of skills related to the development, maintenance, and use of information technology. The following phrases indicate library-specific skills:

25. database design
26. database administration and maintenance
27. internet applications
28. proficiency with personal computer applications
29. website design and maintenance

Transferable: category of context-independent skills dealing with general business functions. The following phrases indicate transferable skills:

30. ability to multi-task
31. ability to synthesize data and concepts
32. ability to work in a fast-paced environment
33. analytical
34. consulting
35. document management
36. editing
37. evaluative
38. financial management
39. fundraising and development
40. knowledge management
41. marketing/outreach/promotion
42. managerial (ability to manage and supervise others; program development; staffing; strategic planning; workload distribution and outsourcing)
43. needs assessment
44. negotiation
45. networking
46. organizational (ability to prioritize tasks; time management)
47. planning
48. policy development
49. presentation
50. problem-solving
51. project management (ability to execute projects to timeline and budget targets)
52. research (demonstrated/proven research ability; primary and secondary research)
53. training
54. writing (preparation of proposals and reports; preparation of newsletters; technical writing)

APPENDIX D: DATA COLLECTION SHEET FOR LS PROGRAMS**PROGRAM INFORMATION**

Program ID number: 00x

Program name:

University name:

Program website:

DEGREE INFORMATION

Degree name:

Dual-degree programs offered:

Degree specializations, concentrations, and/or certifications offered:

Field experiences offered or allowed:

Yes No Cannot determine