

A Case Study on the Current Employment Status of New M.L.S. Graduates

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Motivation and Expectations of the Study

Recent library surveys have tended to look at employment opportunities for individual professional fields, salary ranges on a regional and state level, and the job preparedness of new graduates, among other factors. This study examines an issue that has received less attention—the impact that today's information technology has made on the set of job skills required to either obtain a job or keep a position in the library field. It builds on the work of Yuan Zhou, who looked at the demands for computer skills among academic librarians over a 20-year period and who was one of the first to focus on the increased use of technology in the library workplace (Zhou, 1996, 259-272). In this study, *information technology* is defined as both tools (i.e., e-mail, word processing, and statistical programs) and as proficiencies (i.e., Web page design, systems maintenance, computer programming, etc.). While it is not always clear what "information technology" (IT) encompasses, its ubiquitous presence has been the driving force behind changes in the professional landscape. New positions that could only have been imagined 10 years ago, such as Information Brokers, Instructional Technology Librarians, and Distance Education Librarians, are commonplace, while existing positions have experienced a realignment of job responsibilities or have been eliminated. This mirrors, to a large extent, what is happening in the corporate environment. Indeed, a key impetus for this study is to determine whether significant numbers of library school graduates are being drawn into e-commerce, a plausible assumption considering new economy demands for persons with information-retrieval and information architecture skills.

Although library schools are revamping their curriculum to reflect the needs of a changed job market, there is no consensus as to how technologically knowledgeable graduates need to be or even what kind of technological skills they need to possess. This is attested to by the extensive library literature that has been published in regard to this topic. As Bill Crowley noted in the *Journal of American Science for Information Science* (October 1999), there is a continuing unresolved tension between the "library" and

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"information" components of graduate programs and the needs of the professorate and the lay practitioner, who often is required to use "non-library" skills such as word processing and statistical packages on the job. This notion of library "competencies" has been explored by several authors, among them Lois Buttlar and Rosemary Du Mont (1996). Other authors have studied more specific skills taught in library school. Kay Lowell, for example, has focused on computer literacy, and surveyed ALA-accredited library programs to identify "computer literacy prerequisites" for incoming and exiting library school graduates (Lowell, 1997).

In this unsettled environment, the authors felt that a case study featuring the information technology competencies that are being required for employment and identifying the kinds of jobs that newly minted M.L.S. students are gravitating towards might be useful. Both authors are themselves recent graduates of the Rutgers School of Communication, Information and Library Science (SCILS), and both found employment in an academic library after earning their M.L.S. degrees. Rutgers SCILS is currently redesigning its curriculum to address some of the above issues. Therefore, the authors were curious as to how their peers felt about the information technology coursework they had taken in graduate school and about the type of employment they had found upon graduation.

Rutgers SCILS is a program that serves as the training ground for information science professionals not only in New Jersey, New York, and Philadelphia, but throughout the United States and abroad. Even though it is often seen as a regional school, Rutgers SCILS has a national reputation as evidenced in a recent *U.S. News and World Report*. SCILS ranked sixth with a 3.9 on a 5.0 scale, an "average reputation score" among national graduate Library Science programs, behind Illinois (Champaign-Urbana), North Carolina (Chapel Hill), Syracuse, Michigan (Ann Arbor), and Pittsburgh ("Library School Rankings," 2000). Rutgers SCILS is a library school program whose alumni enter the tri-state job market with relatively high salaries once they become part of the profession. The primary areas of faculty research include information science, information policy, and management of information services (Peterson's Graduate Programs, 1999). The graduating classes of 1998-1999 could choose from a variety of courses which focused on information technology, including "Multimedia structure," "Technology for Libraries and Information Agencies," "Database Management Systems," and "Advanced Database Searching," for example.

The authors' hypothesis is that, although students learned traditional components of library science in school and received exposure to information technology there, hands-on training really begins on the job. They also speculated that advanced information technology skills might translate into better paying positions and that students who had focused on an information technology "track" in library school might be drawn to

corporate jobs. The authors were curious as to what information technology skills new graduates were actually using on the job, and whether they saw these skills becoming more or less significant in the years ahead. The survey instrument was designed to be read linearly, that is, to mimic the respondent's own progression from student, to alumnus, and finally, to employee. It consisted of a short, multiple-choice questionnaire that allowed for respondent feedback. The first four questions elicit information about students' perceived preparedness for the job market. The next six focus on job responsibilities, salary, and job satisfaction. The last four attempt to learn how engaged students are with information technology, and where they saw themselves in the future in terms of Internet usage. The survey instrument is provided below:

- What specific study track did you pursue as a student at Rutgers?
- How much of your coursework at Rutgers focused on acquiring information technology skills?
- Were you satisfied with the level of computer/technology training you received at Rutgers?
- Did information technology or computer skills assist you in getting a job?
- Where are you currently employed?
- Approximately what percentage of your current job involves information technology?
- Are you employed at the kind of job you expected to obtain upon graduation?
- How would you describe your general job satisfaction/working conditions at the present time?
- What is your estimated annual salary?
- What is your job title/description?
- What library area(s) do you work in the course of a day?
- What type of computer technology do you use in the course of a day?
- How many hours per day on average do you use the Internet for work-related functions?
- What do you think is the most useful aspect of the World Wide Web/Internet when it comes to performing your job?
- In five years' time, how do you think your responsibilities will be related to Internet usage overall?

To insure privacy, the Rutgers SCILS Alumni Office conducted a blanket mailing to graduates of the 1998 and 1999 classes. The authors identified themselves in a cover letter as recent SCILS alumni, and asked that surveys be returned in a self-addressed stamped envelope to the authors' work address. A total of 280 questionnaires were sent to all library school graduates; 100 surveys (35.7%) were completed and returned. In retrospect, the fact that the authors were known to several of the respondents

may have contributed to the high return. Individuals were not required to self-identify or to provide an address; however, many did and/or wrote personal and often lengthy comments. The authors were pleased to learn that several respondents felt that the survey was needed and asked to be apprised of the findings.

Input from the data was tabulated via SPSS, a statistical software program that offers a comprehensive and comparative analysis including a series of cross-tabulations. These compared the following factors: study track and current place of employment; coursework and percentage of job involving information technology; job satisfaction and salary compensation and salary compensation and information technology usage.

1. What specific study track did you pursue as a student at Rutgers?

Rutgers had, up until this year, seven “tracks” or “majors” that M.L.S. students could pursue. These consisted of “generalist,” “information retrieval,” “management and policy,” “reference services,” “school media services,” “technical and automated services,” and “youth services.” Certain core curricula were required of all M.L.S. students; however, elective or additional coursework was required for each major. As seen in the analysis, a majority of students while attending Rutgers (39%) opted for the “generalist” route, which combines traditional library studies, some computer classes, theoretical lessons on information transmission trends, and related areas of endeavor. More specialized training was offered through other tracks. Those who selected “reference services” and “school media services” (20%) comprised the next largest categories. Interestingly, selection of an academic track had relatively little impact on the employment opportunities for new graduates. However, those who had followed the “technical and automated services” (6%) and “youth services” (3%) tracks, tended to gravitate toward non-traditional jobs. The most likely employers of new Rutgers SCILS graduates were public libraries, followed by academic and school libraries.

Table 1: Study Questions and Responses by Percentage Rate/Numerical Tally

N=100	
Name of Track	Frequency/Percent
Generalist	39%
Information Retrieval	10%
Management and Policy	2%
Reference Services	20%
School Media Services	20%
Technical and Automated Services	6%
Youth Services	3%
Total	100%

Table 2: Library School Study Track and Current Place of Employment – by Library Type

N=100								
Study Track	Acad.	Corp.	Public	Special	Other	Non-Library	School	Total
General	11	5	13	1	5	4		39
Info Retrieval	1	1	2	1	4	1		10
Management			2					2
Reference	5	1	6	4	2	1	1	20
School Media	1					2	17	20
Tech. Services		1	2	1	1	1		6
Youth Services			3					3
Total	18	8	28	7	12	9	18	100

2. How much of your coursework at Rutgers focused on mastering information technology skills?

As shown in the analysis, the majority of graduates felt that a relatively high percentage of their coursework (between 20%-30%) was devoted to information technology. Thirteen percent reported that over half of their course work focused on information technology skills, while 9 percent reported they had almost no IT training while at Rutgers SCILS. A cross-tabulation comparing this question with question 6 (Approximately what percentage of your current job involves information technology?) revealed the respondents whose jobs required substantial

use of information technology were also the same individuals who reported the most computer training while at SCILS. These respondents were also among the more highly compensated. Five recent graduates are now earning between \$40,000-50,000, and three are earning between \$50,000-60,000. Interestingly, the respondents who fell in the lower range of information technology coursework (0-20%), were evenly divided in the middle salary range (\$30,000-\$40,000). This finding suggests that even though these graduates might not have focused on information technology skills in graduate school, it did become a requirement in the workplace.

Table 3: *Percentage of Coursework Involving Information Technology*

N=100

Percentage of Coursework	Respondents
0-9%	9
10%	16
20%	25
30%	24
40%	10
50% +	13
Total	100

Table 4: *Coursework and Percentage of Jobs Involving Information Technology*

N=100

Coursework	Jobs/w Technology				Total
	1-25%	26-50%	51-75%	76-100%	
0-9%	2	2	3	2	9
10%	3	8	4	1	16
20%	8	8	4	5	25
30%	4	6	7	7	24
40%	1	3	3	3	10
50%	2	2	1	8	13
N/A	2		1		3
Total	22	29	23	26	100

Table 5: *Coursework and Salary*

N=100

Coursework	Salary						Total
	Under \$20,000	\$20,001-\$30,000	\$30,001-\$40,000	\$40,001-\$50,000	\$50,001-\$60,000	Over 60,000	
0-9%		1	3	3		2	9
10%		2	8	6			16
20%	2	3	14	2	3	1	25
30%	3	2	11	6	1		24
40%	2		1	6	1		10
50%	1		3	5	3		13
N/A	1	1		1			3
Total	9	9	40	29	8	3	100

3. *Were you satisfied with the level of computer/technology training you received at Rutgers?*

This question provoked the most comment. Responses were almost evenly divided (Yes - 52, No - 46, and No Answer - 2) with some respondents feeling that they had received too little training, while others reported that they had received more than an over abundance to the expense of developing other library skills.

Table 6: *Satisfaction With Coursework*

N=100

Yes	No	N/A
52	46	2

4. *Did specific information technology or computer skills lead to you getting a job?*

The answer to this question was a resounding "yes." Two-thirds of the respondents (66%) reported that information technology or computer training led to them obtaining a professional position in the library field.

N=100

Yes	No	No Response
66	32	2

5. *Where are you currently employed?*

This query is straightforward and provides a precise definition of an individual's professional position. New library employees in the 21st century are not only being courted by public and academic libraries but also by the corporate sector where electronic databases and the Internet are fast becoming the primary mode of information retrieval. Authors Donna Dolan and John Schumacher provided analysis on the current state of work positions in both a present and prophetic sense, "Jobs have either been redefined or newly designed. Although professionals have different career paths, they share a high degree of job satisfaction and a view that their high-tech preparation took place out of library school...The current crop of library school students may find themselves working outside the traditional setting even if they don't foresee that." (Dolan and Schumacher 1997). New library school graduates (21%) reported that they were working at jobs "other" than librarianship or that they were working in a non-library environment. The remainder were divided among academic libraries (18%), corporate libraries (8%), public libraries (28%), school libraries (18%), and special libraries (7%).

Table 8: Current Place of Employment—by Library Type

N=100

Academic Library	18
Corporate Library	8
Public Library	28
Special Library	7
Other	12
Non-Library (w/Internet)	9
School Library	18
Total	100

6. *About what percentage of your current job involves information technology?*

Almost every library, regardless of its focus, features and makes available technological devices of some type and kind designed to improve operations and services whether they be OPAC systems, bar coding wands, Web page design and other like instruments. The actual breakdown by hour, day, week, and so forth is difficult to determine since the nature of work in a library typically involves performing an array of tasks. Therefore, the measurement here is based on estimated percentages.

Table 9: Information Technology Utilized in Employment Situations—by Percentage of Day

N=100

1-25%	22
26-50%	29
51-75%	23
76-100%	26
Total	100

A cross-tabulation comparing information technology use and salary compensation revealed that 16 of the 29 respondents (55%) who were earning between \$40,001 and \$50,000 spent between 51-100% of their job time using information technology. Five of the eight (62.5%) respondents who earned between \$50,001 and \$60,000, used information technology between 51 and 100 percent of the time.

Table 10: Information Technology Job Usage Compared With Salary Compensation

N=100

Information Technology	Salary							Total
	Under \$20,000	\$20,001-\$30,000	\$30,001-\$40,000	\$40,001-\$50,000	\$50,001-\$60,000	Over \$60,000	N/A	
1-25%	3	4	8	2	3	1	1	22
26-50%	3	2	12	11		1		29
51-75%	1	2	9	8	1	1	1	23
76-100%	2	1	11	8	4			26
Total	9	9	40	29	8	3	2	100

7. *Are you being employed at the kind of job you expected to obtain upon graduation?*

Nearly 72 percent of the respondents have found that a well-defined career path, combined with a burgeoning job market, have made the library profession attractive.

Table 11: *Job Expectations Upon Graduation*

N=100

Yes	72
No	26
N/A	2
Total	100

8. *How would you describe your general satisfaction/working conditions at this time?*

Once a position is secured, one's work environment is an important determining factor of how well or poorly the person functions. Such a scenario has variations since few work environments are perfect; therefore, the respondents were encouraged to judge how they perceive their place of employment on an average, everyday basis. The majority (91%) expressed the view that they had a pleasant work environment, with only nine percent responding that their environment was fair (5%) or poor (4%).

Table 12: *Job Satisfaction Ratings*

N=100

Excellent	24
Very Good	34
Good	33
Fair	5
Poor	4
Total	100

As can be seen from Table 13, there was no clear-cut relationship between salary compensation and job satisfaction. While those who earned over \$50,000 evaluated their jobs as "excellent" or "very good," (8 out of 14, or 57.1%), many of those who earned under \$20,000 were satisfied with their job positions. Five of the nine (55.6%) rated their jobs as "excellent" or "very good" and 3 rated their job conditions as "good."

Table 13: *Job Satisfaction Compared With Salary Compensation*

N=100

Job Satisfaction	Salary							Total
	Under \$20,000	\$20,001-\$30,000	\$30,001-\$40,000	\$40,001-\$50,000	\$50,001-\$60,000	Over \$60,000	N/A	
Excellent	3	2	8	3	5	1	2	24
Very Good	2	1	17	12	1	1		34
Good	3	6	10	12	1	1		33
Fair			2	2	1			5
Poor	1		3					4
Total	9	9	40	29	8	3	2	100

9. *What is your estimated annual salary?*

Along with experience, level, place of employment, and job satisfaction, job compensation is an important aspect associated with employment. The salary scale for a professional librarian varies by size, type of library, location, and other factors. Earnings tend to rise on a yearly basis, as shown by a mid-1990 study conducted by C. Herbert Carson. In his 1997 study, he found that individuals whose jobs required more information technology skills were more likely to be better compensated. "Those whose salaries began at under \$20,000 use technology 20.68 hours per week, whereas those with starting salaries over \$40,000 spend more than 25 hours a week with technology." (Carson, 1997). The authors' study confirmed this finding, as illustrated in Table 10.

It should be noted that most SCILS graduates find employment in the New Jersey-New York area. Employers in these states have a higher pay scale than that found in many other areas in the United States with 69 percent making between \$30,00 and \$50,000.

Table 14: *Annual Salary Estimates*

N=100

Under \$20,000	9
\$20,001-\$30,000	9
\$30,001-\$40,000	40
\$40,001-\$50,000	29
\$50,001-\$60,000	8
Over \$60,001	3
N/A	2
Total	100

10. What is your job title/description?

Each respondent was encouraged to identify his/her job title. The type of functional library positions identified in Table 15 follow a consistent pattern from which a set of individual work titles was later constructed.

Table 15: *Job Title*

N=100

Reference	17
Administrator	19
Youth Services	7
School Media	17
Researcher/Corporate	9
Medical Librarian	3
Cataloger	1
Systems	3
Technical Support	6
Other	6
Technical Services	1
N/A	11
Total	100

The study found that new library school graduates tend to gravitate toward a job dealing with reference, administration, or school media, among other choices. On the surface, these titles are not technologically intensive. However, combined with Table 16, the use of IT is a likely phenomenon. Conversely, the more apt and logically labeled areas of "systems," "technical support/services," and "researcher/corporate" were less represented. This fact may explain the higher level of technical usage figures recorded previously. Seventeen percent can be divided between the "other" and "no answer" columns, which shows that there are a number of persons who are undefined in terms of their job titles. While there was a broad diversity as to an employee's actual job title, no employee identified himself/herself by any of the terms usually associated with the new economy, such as information architect, information broker, Web designer, etc.

11. Which library area(s) do you work in within the course of a day?

Librarians were asked to select from a variety of functions, such as administration, cataloging, or circulation. Today's librarian tends to be recruited to perform a range of tasks, regardless of primary duties. The

most popular areas represented on a daily basis among the respondents were "reference" (76%), and "acquisitions" (49%), and "researcher" (44%). Most librarians did not identify assignments that involved Web-based projects (74%) or systems-related activities (85%). Nearly half the librarians surveyed (49%) were involved in some sort of acquisitions assignment and almost 39 percent had circulation functions. Another 39 percent had administrative responsibilities despite being out of school for one to two years.

Table 16: *Library Areas Worked Within the Day*

N=100

Acquisitions		Reference	
Yes	49	Yes	76
No	51	No	24
Administration		Researcher	
Yes	39	Yes	44
No	61	No	56
Cataloging		Systems	
Yes	39	Yes	15
No	61	No	85
Circulation		Other	
Yes	39	Yes	31
No	61	No	69
Digital Librarian			
Yes	26		
No	74		

12. What type of computer technology do you use in the course of a day?

This question attempted to isolate the different types of technology used by respondents in their work, and to find how often this technology was used on a daily basis. Table 17 shows the breakout of this usage of computer technology.

Table 17: Computer Technology Usage Types

N=100	
Database Usage	
Yes	43
No	57
Electronic Reserves	
Yes	27
No	73
Internet	
Yes	93
No	7
Catalog	
Yes	66
No	34

Many librarians expanded on their answers and provided specific examples of the type of information technology that they were using. Responses included a variety of tools, such as "fundraising software," "CD-ROMs," "Internet and dial-in," "Microsoft NT, ACCESS, and other MS office software," "Proprietary Database," "EXCEL," "Intranet," "Electronic database," "Educational software programs," "Electronic text, text analysis software, computer system management software," "E-journals," "E-Mail," "Netscape composer," "EBSCOhost," "MEDLINE," "OCLC," "Lexis-Nexis," "Westlaw," and "Online periodical indexes," among others. Of all the questions asked, this one was the least well-interpreted by respondents. It is suspected that there is an overlap between the categories "Catalog" and "OPAC" and that the percentages of respondents who make use of vendor or proprietary databases is actually higher.

13. *How many hours per day on average do you use the Internet for work-related functions?*

The Internet possibly has become the most useful information retrieval tool and presentation device introduced into the library world over the past decade. This technology is now common among librarians and patrons alike, and it has redefined professional responsibilities in a work-related context. "It [the Internet] has changed everyone's job, some people's job descriptions and the job market itself. Some of the new jobs include Webmaster, technical support for an Internet Service Provider (ISP) and Web Designer or Web site Coordinator..." (Dona and Schumacher, 1997).

Table 18: Internet Usage Per Day In Regard to Work Functions—by Hour

N=100	
Hours	Frequency
0	2
1	23
2	32
3	17
4	7
5	6
6	7
7	2
8	3
9	1
Total	100

The analysis shows that at least 98 percent of all respondents use the Internet on a daily basis. However, the overall average tended to range between one and three hours. Twelve percent of respondents spent between six and eight hours a day on the Internet. These results show that the Internet has assumed a prominent place in the librarianship workplace.

14. *In five years' time, how do you think your responsibilities will relate to Internet usage overall?*

During the next five years, the World Wide Web has the potential to grow and become an even more important resource. At this time, there is no medium on the horizon that will compete or derail its significance. How librarians perceive the possible changes which might result are important in how one will adapt to how the Internet revolution will be perceived by 2005.

Table 19: Internet Usage in Five Years

N=100	
More Usage	64
About the Same	24
N/A	12
Total	100

The majority of responders believe that there will be more usage (64%) of the Internet by mid-decade. The general view is that the World Wide

Web will endure well into the future. Thus, the perception is intact, but the reality remains to be seen as to how librarians will handle a higher level of demand and expectations associated with the Internet.

Conclusion

This study provides insight on how the average new library school graduate has fared with technology and the job market. In sum, of the survey's 100 respondents, a majority (66%) felt that information technology or computer skills had assisted them in obtaining a job. Seventy-two percent felt that they were employed at the kind of job they expected to obtain upon graduation and 91 percent worked in an environment described as ranging from good to excellent. When it comes to technology, the Internet is used by 98 percent of respondents, with 72 percent using the Internet between one and three hours per day on average. Sixty-four percent believe this usage will increase in five years time. Taken collectively each of the answers contributes to an overall picture of how technologically advanced the current breed of librarians have become. The resulting summary and statistical breakdown of the data gathered has shown how "average" library school graduates have fared outside the classroom.

This particular survey showed a number of different variables and was designed as a basic study on current employment and technology patterns. However, future studies focusing upon such issues as pre-library technology training, other professional experience in line with librarianship as a career goal, comparisons with past graduating classes of library students and other topical papers of this type would help in bringing more detailed and focused information to light as the profession and its practitioner base continues to expand in future years.

Literature Review

The *Library Journal*, for example releases an annual placement and salary survey for library school graduates; see as well the salary reports provided by *American Libraries*, the most recent being *American Libraries* (2000, October) 31 (9) 62. For assessments of employment prospects for current library professions, see Holt, L. (1997, July) Dream jobs: a career guide for the ambitious children's librarian. *School Library Journal* 43 (7) 29-31; Hong, X. & Chen, H. (2000) Whom do employers actually hire? The educating systems librarian research project report 2, The Electronic Library. Oxford; Buttlar, L. (1998, July) Catalogers in academic libraries: Their evolving and expanding roles. *College & Research Libraries* 59 (4) 311-322. See Lowell, K.E. (1997, Summer) Computer Literacy as a formal requirement in library science education. *Journal of Education for Library*

and Information Science 38 (3) 191-199; Buttlar, L. & Du Mont, R. (1996) Library and information science competencies revisited. *Journal of Education for Library and Information Science* 37 (1) 44-62; and Crowley, B. (1999, October) The control and direction of professional education. *Journal of American Science for Information Science* 50 (12) 1127-1135 among other articles on this topic.

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