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ABSTRACT

The purpose of this study was to examine what role information science courses play in the library and information science master's programs. The current course offerings of the 50 American Library Association accredited schools in the United States were analyzed by designated categories to determine the percentages of: traditional library science courses; pure information science courses; and any combinations of the two. This paper explores the relationships between the two disciplines by determining the percentages of both library science and information science courses and then analyzing the direction the master's curriculum is taking. (Contains 12 references.) (JLB)

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**THE ROLE OF INFORMATION STUDIES
IN THE LIBRARY SCIENCE CURRICULUM, 1993**

**A Master's Research Paper submitted to the
Kent State University School of Library and Information Science
in partial fulfillment of the requirements
for the degree Master of Library Science**

by

Jean L. Kindry

July, 1993

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ABSTRACT

The majority of the 50 ALA accredited library schools in the United States have added information science in some form to their official names. Periodically, studies have been conducted to examine the extent to which information science courses (as defined by those nontraditional library courses that would not have been offered prior to information science introduced as its own field) have been included in the traditional library science curriculum. This is a content analysis of the most current (1993) catalogs of the schools, studying the percentage of traditional courses, information science courses, and variations between. This study maps the current trends of library science master's programs in 1993 and makes observations for future training of library professionals.

Master's Research Paper by

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B.S., Edinboro State College, 1968

M.L.S., Kent State University, 1993

Approved by

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CHAPTER 1

INTRODUCTION

Purpose of the Study

The purpose of this study is to examine what role information science courses play in the library and information science master's programs in the United States. The current course offerings of the 50 American Library Association accredited schools in the U.S. were analyzed by designated categories to determine what were the percentages of traditional library science courses, pure information science courses, and any combinations of the two. Prior studies have been interested in identifying the general groupings of the information science related courses offered by library graduate schools. This paper attempts to establish the relationships between the two disciplines by determining the percentages of both library science and information science courses and then to analyze the direction the master's curriculum is taking.

The field of library science is rapidly expanding to include the technology of computers with all the access to expanded information such technology offers. Margaret Myers warns, "Libraries are hiring computer and systems programmers, personnel, and staff development specialists, public relations personnel, affirmative action coordinators, restoration specialists, translators, and subject specialists."¹ It is the responsibility of the educational institutions to prepare their students to understand and to manage not only the traditional resources but also prepare for future developments such as the present and coming technology.² This study will review to what extent information courses are integrated in the curriculums of our library schools in 1993. This analysis can help those responsible for training our future librarians to

¹Myers, 109.

²Youngmeyer, 111.

see current trends and make recommendations for the direction of education in the library science field.

Limitations of Work

In analyzing the course offerings only those regular courses offered in the printed catalog or equivalent listing leading to the master's degree were categorized. Special workshops or other short term special offerings were not considered. Adjunct courses for combined degrees were not included. Each course description was read and a subjective decision was made to place it in one category. (See Code for Course Categories, p 7.)

Definition of Terms

For the purpose of this study traditional library science courses are the curriculum covering the theory and practical applications which have historically been employed in the teaching of those persons enrolled in graduate programs to prepare for professional roles in public, academic, school, and specialized libraries. Among other areas these include cataloging, reference, foundations, type of patron courses, and type of library courses.

Information studies essentially developed in the 1950's and 1960's from the plethora of scientific information to which the computer allowed ready access, therefore much of the information science curriculum has developed from the "terms of the problems it seeks to solve, or the phenomena it investigates"³. Examples of such information science courses following this definition are networking, information storage and retrieval, programming, and records management. In light of other

³Tague, 90.

parallels with the research of Fosdick and Chaudhry, a choice has been made to follow their definition of information science courses. "Non-traditional offerings in the library science curriculum have been considered as information science courses, in other words, courses that would not have been offered in library schools prior to the interest in and awareness of information science as a field in its own right in the 1960s."⁴

Computers and the resulting technological hardware and software have impacted library curriculums in many ways and in a variety of degrees from online searching being integrated into reference services to whole new ways of handling circulation. This study makes a decision to consider computer services that are a natural extension of traditional library service, such as online searching within a reference course, as belonging to traditional library science courses. Parallels can be made in technical services as in the use of OCLC in cataloging. It is the intention of this study to classify in fairly broad terms the more traditionally handled library science courses from the courses drawn more from information science studies. It is not the intention of this study to definitively segregate the information science categories into more precise categories than are listed in this paper's Code of Course Categories. Further research delving into the precise nature of information science course offerings in greater depth than catalog descriptions needs to be done for the library school curriculums in the United States to obtain a more specific breakdown of the individual information science components of the library science curriculum.

Information science curriculums are designed to educate information specialists and systems designers in the technology and theory of information, especially computerized bibliographic retrieval systems for a wide range of information

⁴Chaudhry, 190.

users in a diverse range of organizations, of which libraries might be one such organization. However, the focus of the training tends to be for commercial settings. Information science studies in the library graduate program are for the most part directed toward applications in library settings. A precise definition of information science continues to present a thorny problem.

CHAPTER 2

LITERATURE REVIEW

Description of Literature Search

In the last few years almost all library schools have incorporated information in their official name. To what extent have courses dealing with information science been integrated into the library science curriculums? There have been a number of studies which have researched the type of information science courses included in the graduate programs in library science. Early studies of this type were surveys done by Isabella,⁵ Rees,⁶ and Bracken and Shilling.⁷

Jack Betzer conducted two important studies, one in 1968⁸ (reported in 1971) and the other in 1972⁹ (reported in 1975). The 1968 study was limited to the master's program, while the 1972 study included the bachelor's, master's, and Ph.D. level programs, but limited comparison to the master's level only. In these studies he sent questionnaires to all university departments in the United States. His search yielded a wide scope of information science courses in a number of disciplines. The courses were not limited to the library science curriculum. Betzer discovered that of the 45 schools responding in his 1968 survey, only nine offered more than three courses each which were information science related.¹⁰ The rest of the 36 schools offered very little beyond introductory courses related to information science. In the 1972 study

⁵Isabella.

⁶Rees.

⁷Bracken and Shilling.

⁸Betzer, 1971.

⁹Betzer, 1975.

¹⁰Betzer, 1971, 194.

he found more computer utilization at the expense of traditional library functions.¹¹ However, again the study did not focus on the library science master's programs, but rather all information science courses offered at the participating schools.

Further studies of information science in library school curriculums were conducted by Fosdick^{12 13} and Tague.¹⁴ Fosdick scanned catalogs of fifty-four of sixty-five ALA accredited graduate programs in library science. He found the information science courses could be classified in five general categories: library automation, information storage and retrieval, system analysis, interactive computer systems, and programming. He acknowledged that these five categories were not mutually exclusive, but that each course cited in the catalogs could fit into one of the five. These five categories are among those which are used in this paper.

Tague analyzed the program catalogs of the seven Canadian graduate library programs and correspondence and telephone conversations with the deans or directors of the institutions. Her findings were that the deans or directors reported all programs at that time seemed based on the integration of library and information science. She listed all the apparent information science courses by institution, course number, and name considered to be information science oriented in one of nine appendixes: 1. courses in library automation, systems analysis, networking, 2. computer science, data processing, 3. communications and the media, 4. information retrieval systems, documentation, 5. advanced courses in the organization, control of information, 6. linguistics, 7. quantitative methods, statistics, mathematical models, 8. research methods, projects, and 9 general courses in information science.

¹¹ Betzer, 1975, 18.

¹² Fosdick, 1978.

¹³ Fosdick, 1984

¹⁴ Tague.

A more recent study of this type was done in Asia by Abdus Sattar Chaudhry,¹⁵ in which, upon review of earlier mentioned studies, he conducted a survey of the information science curricula in the graduate library science programs of Asia. He sent letters to 42 library school directors requesting not only catalog course listings, but also information in whatever format they cared to write, describing the contents of information science-related courses. Fourteen schools (33.3%) responded directly to the survey, so he used the schools' catalogs as an alternate source of information. He offered close comparisons with the findings of Belzer, Tague, and Fosdick in that courses tend to fall in recurrent categories. Information storage and retrieval, and library automation were the most common courses, in all studies, followed by system analysis in United States schools, a course of study less popular in Asia. Chaudhry listed the following subject topics as the five areas into which the majority of courses offered in the Asian schools fell: information storage and retrieval, information systems and programs, library automation, communication and information theory, and system analysis.

As can be seen from the various ways information courses have been grouped in the preceding studies that there are many variations in the determination of categories.

¹⁵Chaudhry.

CHAPTER 3

PROCEDURE

Methodology

The first step in preparing for a content analysis of current course offerings for the master's program was to send a letter to each of the 50 ALA accredited library schools in the U.S. requesting their latest catalogs. A total of 45 responded. The catalogs of the schools were then surveyed with the graduate course offerings of each school recorded by course number in a notebook. A list of categories was developed with major divisions for the more traditional library science type courses (A-I), the more information science type courses (J-P), and the basic combination subjects of these two areas (CJ). See the following Code for Course Categories.

When considering construction of a category, great effort was made to envision the overall framework into which specific courses could be placed. It was necessary first to determine if it primarily served traditional library science functions and services or if it was basically an area that has sprung out of the computer and/or communication generated technology that could also have library applications. Obviously, areas such as online reference and online cataloging offer dilemmas, but the emphasis was put on the tradition of library service in these areas, simply enhanced by computer technologies. Libraries have a long tradition of collecting nonprint type of information in film, records, and microform. Software can function as another nonprint medium. Multimedia was combined with the physical building facilities, simply because there were few of the latter such courses offered and for this study made no difference to the outcome to the premise of the study. The combination course category CJ illustrates the overlap in concepts and vocabulary of the two other major groups that is

impossible to clarify further because of both the intricate relationship and the brief descriptions that course listings offer.

In the traditional library science course section, category A includes basic theory and history courses of librarianship, such as the ethics, foundations, and history of the profession. Technical services including cataloging (both manual and online) are represented in B. The C categories, C - C₄, include the organizational knowledge courses for running a library and providing services to the patron. C offers, in essence, the how-to courses in administration, management, archives, serials, children's and young adult literature, adult reader services. C₁ deals with providing bibliographic instruction to the patrons. C₂ covers reference resources in general and specific knowledge areas, including online databases in subject areas. C₃ embodies the types of library courses, excluding school libraries, while C₄ includes type of patrons courses. D covers school media center courses and those presenting instructional design not specifically geared to bibliographic instruction. Research including methods courses, independent studies, the research paper or thesis is represented in the E category. Any course offering the practical work experience such as a practicum or internship is labeled F. Multimedia, including audio-visual production and management, and the few physical building facilities courses were grouped in H. Although a few schools required a comprehensive exam to graduate, the category I was used only when the comprehensive exam was required as a specific course.

The second division covers the information science courses, J-P. The category J represents the introductory theory and basic hands-on courses such as the introduction to DOS, word processing, and the general overview of basic computer hardware and software. K includes more advanced hands-on and theory courses, including bibliometrics and national and international information policy studies. The

categories L-P are adapted from the studies used by Foedick and Chaudhry. Library automation (L), system analysis (N), interactive computer systems, networks, and telecommunications (O), and programming (P) are straightforward, self-evident categories. The M category is the workhorse of information science studies representing various specific ways of manipulating data. Included in M are information storage and retrieval, abstracting, indexing, vocabularies, thesaurus construction, searching methods, database construction and manipulation, and records management when these subjects appear as stand alone course titles as versus being incorporated in a traditional library course.

The researcher then read each course description and made a judgment on which category best fit the course. A category code letter was assigned to each course. Results were tabulated and entered into a spreadsheet for computation, comparison, and graphing.

Words are flexible, having one connotation in one usage and another elsewhere. Courses were categorized solely on the written descriptions in the catalogs. Oral History at Simmons appears to be a general library course while Oral History at Catholic University is presented as a research method. Bibliography is a research tool at University of California at Los Angeles, while at the University of Iowa it is a reference course. Multimedia can refer to the entire span of nonprint technologies, and in some descriptions includes computer software. The code of categories was made as precise as possible.

CODE FOR COURSE CATEGORIES

1. TRADITIONAL LIBRARY SCIENCE COURSES:

- A = Theoretical introductory courses to librarianship, including foundations, history of books and publishing, ethics, libraries of world comparisons, trends in librarianship
- B = Technical services, including cataloging and online technical services
- C = Library science knowledge courses, including management, administration, archives and preservation, serials, children's and young adult literature, adult reader services
- C₁ = Bibliographic instruction
- C₂ = Reference resources in general and specific knowledge areas, including online databases in subject areas
- C₃ = Type of library such as public, academic, special archive, medical, law, but excluding school libraries
- C₄ = Type of patron such as children, young adult, ethnic, etc.
- D = School media center courses; instructional design
- E = Research including methods courses, independent studies, research paper, thesis
- F = Practicum, internship, practical work experience
- G = Multimedia, including audio-visual production and management. Also includes the physical building facilities
- H = Seminars on various subjects that are not precise enough in subject matter to put in a category. Includes directed readings, special problems, institutes
- I = Master's comprehensive exam when required as a specific course

II. INFORMATION SCIENCE COURSES:

- J = Information science - introductory, theoretical, and basic hands-on courses
- K = Information science advanced courses, including bibliometrics, advanced subjects, national information policy
- L = Library and /or office automation
- M = Information storage and retrieval, abstracting, indexing, vocabularies, thesauri, searching methods, database construction, records management
- N = System analysis
- O = Interactive computer systems, networks, telecommunications
- P = Programming

III. COMBINATION COURSE

- CJ = Use and users of information, marketing of information products and services, library and information studies, stressing information and/or communication in library and information centers

CHAPTER 4

REVIEWING THE DATA

Course Category Studies

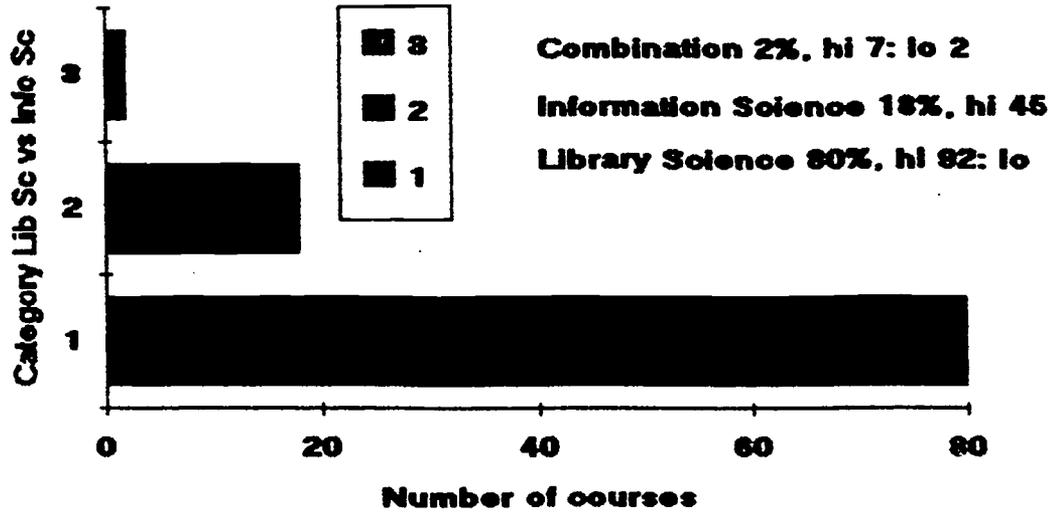
From the 45 schools responding a total of 2285 course descriptions were assigned 1 of 21 categories as illustrated in the category spreadsheet. (Appendix A) Library science courses make up 13 categories (A-I), information science courses comprise 7 categories (J-P), and a combination course has 1 category (CJ). Of that total 1825 courses or 80% fell in the library science A-I group, 421 courses or 18% were in the information science J-P group, 39 or 2% were a combination course.

In the 80% traditional library science section, reference courses C₂ comprised 17% of the total courses. General library science courses C made up 16%, followed by type of library courses C₃ with 9% and research E with 7%.

In the 18% of information science courses record management courses boosted the category M to 6%. The more general introductory and theoretical courses CJ make up only 4% of the total number of courses.

On the lower end of the range, aside from the one comprehensive exam course in I category, teaching patrons the use of the library and its tools, i.e. bibliographic instruction C₁, is only offered at 21 schools for a total of 1% of all courses. Also in the 1% range are the 22 courses in networks/telecommunications O and the 9 courses in programming P offered by only 6 schools.

Comparison of Library Science vs. Information Science Courses in the LS Master's Programs



Required Core Course Studies

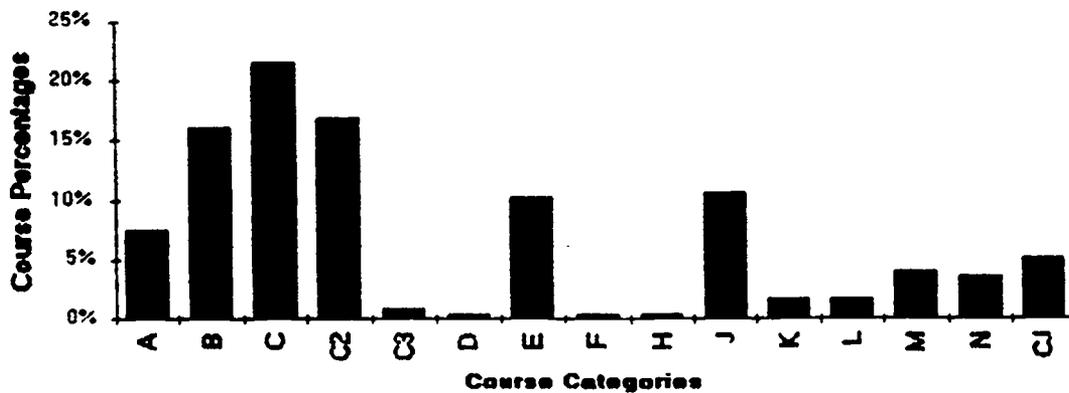
The core courses for the basic master's degree in library and/or information science as listed in the schools' catalogs were entered in a spreadsheet. (Appendix B) Two schools did not indicate their core requirements. The degree names varied from school to school (M.L.S, M.L.I.S, M.S., M.A., M.S.L.S, M.S.I.S, M.A.L.I.S., M.A.L.S, M.I.L.S., M.I.S. in descending order of use). When the school offered separate degrees for library and information studies as do North Carolina Central at Durham, Drexel University, and University of North Carolina at Chapel Hill, a second line was added to record the information science degree. University of North Texas does not offer a separate degree, but instead offers a separate concentration with one core course requirement different. Florida State University indicated that they are in the process of designing a second degree reflecting the information science concentration, and that it will use the current library science numbers.

Of special note the information science curriculums offered at University of Pittsburgh and Syracuse University were reviewed for this study and found to have a focus that was not on the library science profession. Although at the University of

Pittsburgh the Department of Information Science and the Department of Library Science are both housed in the School of Library and Information Science, the objectives of the departments are different. The Library Science Department states in the catalog that its objective is "to provide an educational experience that will enable graduates to develop leadership roles within the profession." The Information Science Department gives as its objective "educating information specialists and systems designers capable of analyzing, designing, implementing, and evaluating information systems and networks for a wide range of information users in a diverse range of organizations." As befitting the objectives, the curriculum of the Information Science Department spans a far greater scope than can be categorized in the category codes applied to curriculums designed specifically to train persons in the library science profession. A similar scenario is true of Syracuse University's programs.

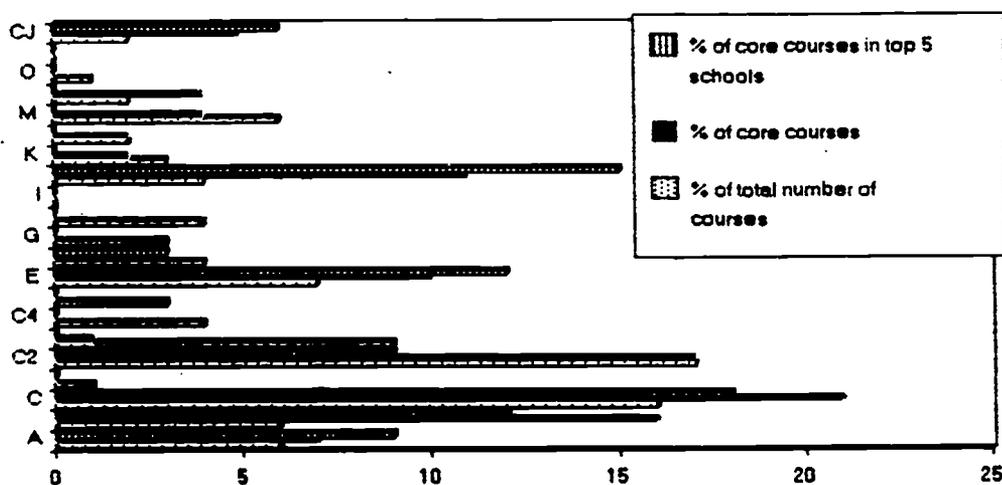
In the required core course spreadsheet (CORECAT.XLS - Appendix B) nearly three fourths of all core courses fall in the library science designation, followed by 21% information science, and 5% combination courses. For those offering a separate degree in information science (North Carolina Central at Durham, Drexel University, and University of North Carolina at Chapel Hill the percentages are 25% library science, 75% information science.

PERCENTAGE OF CORE COURSES IN EACH CATEGORY



Herbert White in a recently published study¹⁶ on the top five American Library Association accredited library schools listed Illinois, North Carolina at Chapel Hill, Michigan, Wisconsin at Madison, and Indiana as perceived by full-time faculty members at schools with programs accredited by the American Library Association that prepare students at the master's level for careers in library and information science and directors of academic libraries belonging to the Association of Research Libraries as providing the highest quality education for librarianship and information science at the master's level. Using data from the core course spreadsheet, the percentages of the thirty-four core courses involved were calculated and entered in a comparison chart of percentages of total courses vs. core courses vs. top five schools' core courses.

COMPARISON OF PERCENTAGES OF TOTAL COURSES VS. CORE COURSES VS. TOP 5 SCHOOL'S CORE COURSES



A total of 79% of these schools' core courses were in the traditional library science area (A foundations 8.8%; B technical services 11.7%; C general library science 17.6%; C₂ reference 8.8%; E research 11.7%; F practicum 2.9%) and 21% were information science type courses (J, an introductory course 14.7% and CJ, a

¹⁶White

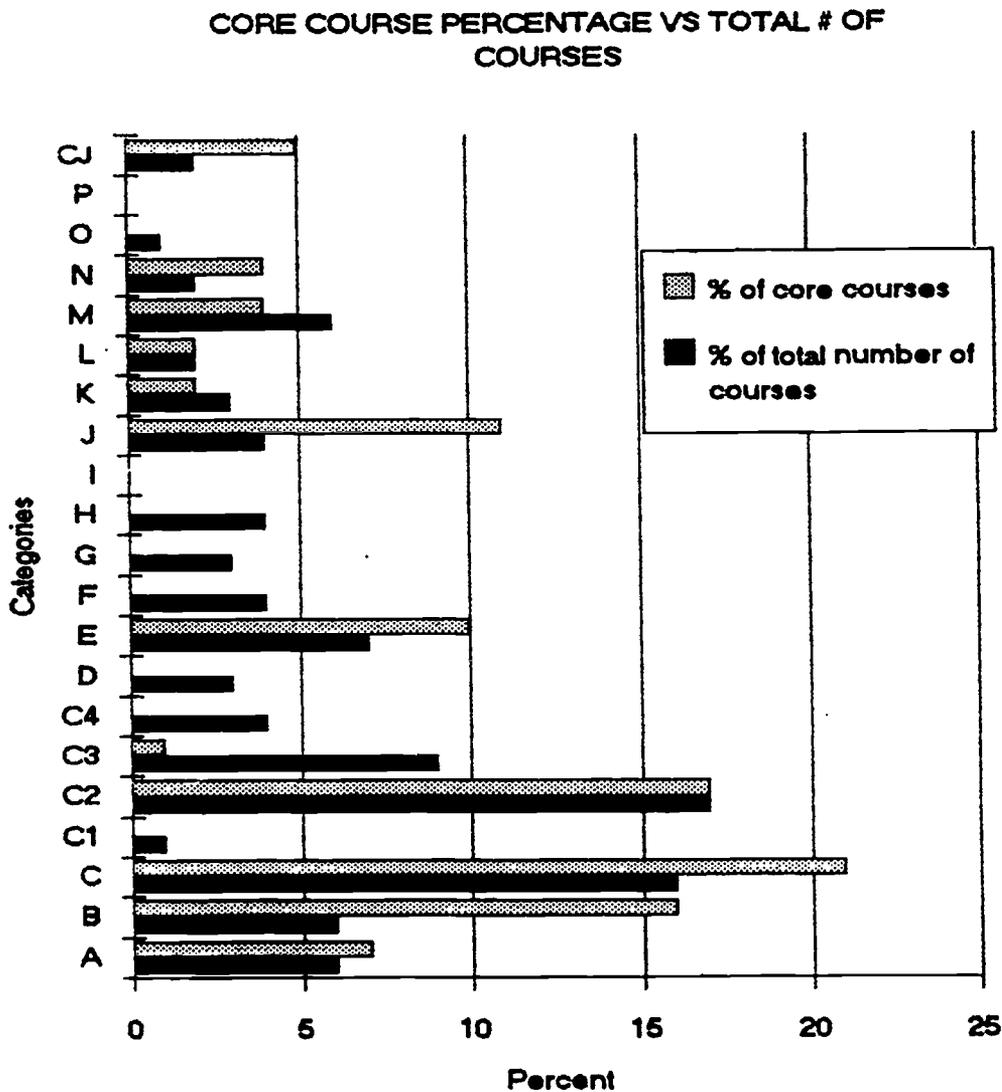
combination course 5.8%). The areas represented are what might be expected of a strong library science program.

However, is this enough? In the intervening years since this study was first done, some of the major schools (University of Chicago, Case Western Reserve University, Columbia University) have closed their doors. This year Brigham Young University is closing and UCLA at Berkeley and at Los Angeles are not accepting students. There is an inherent message here. What the historically top library schools have valued as their primary objectives is not being perceived to be of value by enough others. The number of schools has been shrinking and the job market for professionals around the country is generally stale. Several projected reasons are first because the profession is not vocal enough to market its skills and potential worth to employers and the public who fund the libraries, and second the profession has not fully utilized its expertise with the new computer generated communications and management techniques. The focus of these skills needs refined. The best of the old skills needs to be married to the new technologies and then those redefined abilities need to be marketed to information users.

Not all 21 categories yield core courses. There are no core courses in bibliographic instruction C₁, type of patron C₄, multimedia G, comprehensive exam I. Predictably, the highest percentage of core courses fall in the general library science category C with 21% of all core courses being in that area with 37 schools requiring such a course. The required core courses in descending order by percentage, followed by the number of schools requiring the course(s) are: 17% in the area of reference C₂, 38 schools; 16% in the area of technical services B, 39 schools; 10% research/independent studies E, 21 schools, 7% foundations A, 17 schools.

In the information science section of the core course spreadsheet, the biggest areas are the 11% of introductory and theoretical information science courses J required by 22 schools and the 5% of combination CJ courses required by 11 schools.

Only 4% of all core courses fall in information storage and retrieval M, 9 schools and systems analysis N, 6 schools.



On the other hand the statistics yield some surprises. Only 17 out of the 45 schools require a foundation type course. Then again, two schools did not even offer the courses. Every school offers at least one technical services course B, but only 39 out of the 45 schools require the students to take one such course to graduate. Some sort of reference course C₂ is required at only 38 of the 45 schools although reference

services form the backbone of the library profession. Apparently even within the traditional library science courses neither the knowledge of the profession's foundations nor the traditional skills of cataloging and reference are held to be universally required to be a librarian.

CHAPTER 5

CONCLUSIONS

The initial purpose of this study was to review the role information science plays in the library science curriculum of the master's program. What we teach in our library schools is a guide to the view we hold of the profession. Technology has crept into the library by way of automated catalogs, online technical services, and online and CD-ROM information retrieval to answer reference questions. While some of these advances have been incorporated into the traditional courses, according to the core requirements, not much beyond the basic introductory information courses are required. In fact 12 of the 45 schools do not require any information science oriented course at all. It appears that the library profession is being dragged reluctantly into the electronic age rather than learning to manipulate the technology to provide better library service.

On one hand we lament the encroachment of the commercial information services on traditional library turf, yet we are not doing enough to train students to compete in the marketplace. Even if that tiny rural public library does not have computer services in 1993, what changes will 1995, or 2005 bring? If the applicant to library school has only the comforting image of the physically enclosed library of the past one hundred years, and does not have the vision of the potential of the profession, it is the responsibility of the schools to provide curriculum to create that vision. How they meet the challenge will define the future of the profession.

One way schools can meet the challenge is to take a long hard look at the core courses they offer. Schools need to be more aggressive in addressing what is necessary preparation for the future library situation as well as the current one. Definitely future librarians need to be grounded in foundations, reference sources and techniques including online sources, management (preferably with a business

department even if libraries are not a profit generating organization), cataloging and technical services, and selections and acquisitions for a well rounded professional foundation in the traditional sense. In addition to those core courses additional core courses should be developed and required, utilizing the power of computers to enhance traditional services. A few schools currently require demonstrated proficiency in basic personal computer skills of word processing, spreadsheets, database construction, and familiarity with DOS, either with screening tests or with a basic introductory course. Such a course should be mandatory as well as a course that introduces CD-ROMs, other such new technology, and networks in theory and practice. A record management course should also be a required course. Of course, it could prove a challenge to current faculty to update themselves in the new technologies, but the future direction of librarianship is at stake. Does the profession stagnate or adapt to the new conduits of information exchange?

University	A	B	C	IC1	IC2	IC3	IC4	D	E	F	G	H	I	TOTAL A	J	K	L	M	N	O	P	TOTAL B	TOTAL A + B/CJ	AB + CJ	
Univ of Arizona	5	3	7	0	6	4	0	1	1	0	1	2	0	30	77%	3	3	1	1	1	0	9	39	0	39
Univ of N Texas	3	4	8	0	16	6	5	2	10	2	1	7	0	64	74%	9	2	3	5	1	1	21	85	2	87
Florida State Univ.	3	5	5	0	8	3	5	2	5	2	7	0	1	46	84%	3	1	0	2	1	0	8	54	1	55
State Univ of NY @ Buffalo	4	2	3	1	7	3	3	1	3	2	2	2	0	33	80%	1	2	0	3	1	0	7	40	1	41
Univ of Oklahoma	2	2	11	0	6	0	1	2	3	1	1	3	0	32	86%	1	1	1	0	0	1	4	36	1	37
Texas Woman's Univ	4	3	9	0	8	5	1	2	6	2	2	3	0	45	83%	3	0	1	3	1	1	9	54	0	54
Univ of Michigan	2	3	12	2	12	5	1	2	4	2	1	1	0	47	82%	2	0	1	6	0	0	9	56	1	57
Clark Atlanta Univ.	2	3	5	0	6	4	1	2	3	1	2	1	0	30	88%	1	0	1	2	0	0	4	34	0	34
Univ of N Carolina @ Greensboro	1	1	5	0	8	4	3	5	1	2	2	2	0	34	81%	1	2	1	1	0	1	8	42	0	42
St. John's Univ.	2	3	6	0	13	5	5	1	3	3	2	0	0	43	81%	2	1	0	5	1	1	9	52	1	53
Univ of Missouri @ Columbia	4	1	5	0	8	8	2	1	4	1	1	5	0	40	83%	2	1	1	3	1	0	8	48	0	48
Queen's College	1	3	8	0	6	4	1	1	2	1	2	1	0	30	83%	2	0	0	1	1	0	4	34	2	36
Univ of Iowa	2	2	6	0	3	6	2	1	3	2	0	1	0	27	87%	2	0	1	1	0	0	4	31	0	31
Univ of Maryland	5	5	8	2	9	6	3	3	3	2	1	2	0	48	74%	3	7	1	4	1	1	17	65	0	65
Wayne State Univ	2	2	10	1	7	2	3	3	6	2	3	1	0	42	86%	1	1	0	3	2	0	7	49	0	49
N Carolina Central Univ @ Durham	5	3	3	0	7	4	3	1	5	1	0	0	0	32	74%	2	0	1	3	2	2	10	42	1	43
Univ of Wisconsin	1	2	5	1	12	8	2	2	2	2	0	2	0	39	80%	3	1	2	2	1	0	9	48	1	49
Univ of Southern Mississippi	8	4	9	1	8	6	2	2	5	2	1	2	0	50	94%	1	0	1	0	0	0	2	52	1	53
Drexel Univ.	2	3	6	1	11	6	1	0	6	1	2	1	0	40	88%	2	5	2	3	4	0	18	58	1	59
Rosary College	3	5	8	0	9	9	1	1	1	4	3	0	0	44	86%	2	0	0	3	1	0	6	50	1	51
Clanon Univ. of PA	4	4	7	0	7	1	5	1	2	2	0	0	0	33	87%	1	1	1	2	0	0	5	38	0	38
Univ of Tennessee	3	2	5	1	5	3	2	1	3	1	2	3	0	31	82%	1	0	1	3	1	0	6	37	1	38
Simmons College	5	5	12	1	9	6	3	1	2	4	2	0	0	50	78%	4	4	1	3	1	0	13	63	1	64
Kent State Univ.	4	4	4	1	9	6	3	1	7	2	0	0	0	41	87%	1	1	1	3	0	0	6	47	0	47
Univ of Pittsburgh	5	2	19	0	8	6	4	4	2	3	0	1	0	54	86%	1	0	1	6	1	1	9	63	0	63
Univ of Hawaii @ Manoa	4	2	9	1	9	0	0	2	3	1	1	3	0	35	74%	3	1	2	4	1	0	11	46	1	47
Univ of Washington	3	3	11	0	11	1	3	1	3	1	1	1	0	39	75%	3	1	1	4	0	1	10	49	3	52
Univ of N Carolina @ Chapel Hill	4	4	10	1	9	6	1	2	3	1	1	3	0	45	69%	6	3	0	6	2	1	18	63	2	65
Pratt Institute	0	3	8	1	12	1	1	1	2	1	1	1	0	32	76%	1	0	1	6	1	1	10	42	0	42
Emporia State Univ	2	2	8	1	3	0	6	1	4	1	0	1	0	29	78%	2	1	0	3	1	0	7	36	1	37
Univ of S. Carolina	2	4	12	1	8	6	4	2	2	1	3	1	0	46	84%	2	0	0	2	1	1	8	54	1	55
UCLA Univ of CA @ Berkeley	5	2	7	0	3	3	1	0	2	6	1	3	0	32	67%	2	2	1	5	3	0	15	47	1	48
Univ of Alabama	2	2	7	1	7	4	1	1	8	1	3	0	0	37	80%	2	1	1	3	1	0	8	45	1	46
Univ of Kentucky	3	4	7	0	6	5	2	2	4	2	0	0	0	35	80%	1	1	0	2	1	1	6	41	3	44
Univ of Texas @ Austin	3	3	13	0	10	6	1	0	4	2	3	11	0	55	79%	0	4	2	4	1	1	12	68	3	71
Univ of Wisconsin @ Madison	4	3	11	0	7	5	3	3	6	1	1	4	0	48	84%	1	1	1	3	0	2	8	56	1	57
Indiana Univ	7	3	7	0	8	9	2	1	2	1	1	2	0	43	84%	1	1	1	3	1	0	7	50	1	51
UCLA Univ of CA @ Los Angeles	4	6	14	1	20	6	2	1	6	5	0	3	0	68	76%	7	2	1	9	1	0	20	88	2	90
San Jose State Univ.	1	3	9	1	12	4	2	1	3	3	0	1	0	40	77%	4	1	1	4	1	0	11	61	1	62
Louisiana State Univ	2	3	7	1	7	5	1	1	3	5	0	2	0	37	82%	3	0	0	3	1	1	8	45	0	45
Univ of Illinois @ Urbana Champaign	4	4	18	1	15	2	2	0	4	1	3	0	0	54	82%	4	1	2	3	0	1	11	65	1	66
Syracuse Univ.	0	2	9	1	7	1	0	2	0	0	0	1	0	23	55%	3	7	0	5	2	1	19	42	0	42
Northern Illinois Univ.	1	5	6	0	9	3	2	1	4	1	0	1	0	33	92%	1	0	1	1	0	0	3	36	0	36
Univ of Rhode Island	4	3	7	0	5	7	1	1	2	2	2	2	1	35	86%	2	0	1	3	0	0	6	41	0	41
Catholic Univ of America	5	6	11	0	10	11	2	2	3	1	2	1	0	53	82%	0	0	2	7	1	0	11	64	1	65
TOTALS IN EACH CATEGORY	142	142	377	23	386	203	99	68	160	83	61	80	1	1826	80%	102	60	41	145	42	22	421	2246	39	2285
PERCENT OF CATEGORY	6%	6%	16%	1%	17%	9%	4%	3%	7%	4%	3%	4%	0%	60%		4%	3%	2%	6%	2%	1%	18%	98%	2%	100%

University	A	B	C	C2	C3	D	E	F	H	TOTAL A	J	K	L	M	N	TOTAL B	TOTAL AB	CJ	AB + CJ
Univ of Arizona										0						0	0		0
Univ of N Texas - Lib Sc	1	1	1	2			1			6						0	6		6
Univ of N Texas - Info Sc concentration	1	1	1	2			1			5						0	5	1	6
Florida State Univ	1	1	1	1			4			4	1				1	2	6		6
State Univ of NY @ Buffalo	1	1	1	1			4			4						0	4		4
Univ of Oklahoma	1	1	2	1			6			6					1	1	6		6
Texas Woman's Univ	1	1	2	1			6			6	1				1	2	7		7
Univ of Michigan	1	1	1	1			3			3					1	2	5		5
Clark Atlanta Univ							0			0					0	0			0
Univ of N Carolina @ Greensboro	1	1	3	1			6			6					0	0	6		6
St John's Univ	1	1	1	1			3			3					1	1	4		4
Univ of Missouri @ Columbia	1	1	2	1			4			4					1	20	5		5
Queen's College	1	1	1	2			5			5					0	0	2		7
Univ of Iowa	1	1	1	1			5			5					0	0	5		5
Univ of Maryland	1	1	1	1			3			3					1	3	6		6
Wayne State Univ	1	1	1	1			4			4					1	2	6		6
N Carolina Central @ Durham - Lib Sc	1	1	1	1			5			5					1	1	6		6
N Carolina Central @ Durham - Info Sc	1	1	1	1			1			1					2	6	7		7
Univ of Wisconsin	1	1	2	1			4			4					1	1	5		5
Univ of Southern Mississippi	1	1	2	1			7			7					1	13	8		8
Drexel Univ - Lib Sc	1	1	2	1			2			2					1	2	4		4
Drexel Univ - Info Sc							0			0					1	5	5		5
Rosary College			1	2	1		4			4					0	0	4		4
Clarion Univ of PA			1	2	1		6			6					0	0	6		6
Univ of Tennessee			1	2	1		6			6					0	0	6		6
Simmons College			1	1	1		4			4					0	0	4		4
Kent State Univ	1	1	1	1			5			5					1	1	6		6
Univ of Pittsburgh - Lib Sc			1	2	1		4			4					0	0	4		4
Univ of Hawaii @ Manoa			1	1			2			2					0	0	2		2
Univ of Washington	1	1	1	1			2			2					1	2	4		4
Univ of N Carolina @ Chapel Hill - Lib Sc	1	1					4		1	4					1	1	5		5
Univ of N Carolina @ Chapel Hill - Info Sc	1	1					3		2	3					2	2	5		5
Pratt Institute			1	1	2		4			4					1	2	6		6
Emporia State Univ	1	2	2	1			7			7					1	4	11		12
Univ of S Carolina	1	1	1	1			4			4					1	1	5		5
UCLA Univ of CA @ Berkeley	1	1	1	1			2			2					1	1	3		3
Univ of Alabama			1	1	1		6			6					0	0	5		5
Univ of Kentucky			1	1	1		2			2					1	1	3		3
Univ of Texas @ Austin			1	1	1		4			4					1	1	5		5
Univ of Wisconsin @ Madison			2	2	1		6			6					1	3	9		9
Indiana Univ			1	2	1		4			4					0	0	4		4
UCLA Univ of CA @ Los Angeles			1	1	1		3			3					0	0	3		3
San Jose State Univ			1	1	1		3			3					2	2	5		5
Louisiana State Univ	1	1	2	1			6		1	6					1	14	7		7
Univ of Illinois @ Urbana Champaign			1	1			3			3					0	0	3		3
Syracuse Univ			1	2	2		7			7					1	13	8		8
Northern Illinois Univ			1	2	2		7			7					1	13	8		8
Univ of Rhode Island	1	1	2	1			5			5					0	0	5		5
Catholic Univ of America			1	1	1		3			3					1	1	4		4
TOTAL of categories	20	41	56	45	2	1	194	27	4	194	74%	10%	2%	4%	10	54	248	13	261
PERCENT OF CATEGORY	8%	16%	21%	17%	1%	0%	74%	10%	0%	74%		3%	2%	4%	3%	21%	95%	5%	100%

Note: Percentages have been rounded off and may not equal 100%.

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