

The Status of Research in Library/Information Science: Guarded Optimism

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This article reports a study that obtained the assessments of leading researchers in library/information science (LIS) concerning the status of research in the field. Overall, there is evidence to support the conclusion that status of research in LIS has improved somewhat in the last eight to ten years and will continue to improve. Five key issue areas affecting the status of LIS research are identified: image and importance of research, research competencies, strengthening commitment to research in professional associations, communications between researchers and practitioners, and research on the status of LIS research. Specific recommendations are offered to address these issues and improve the status of research in LIS.



One issue that continues to draw interest in the profession is the status of library/information science (LIS) research. In recent years there has been increased concern that

The information field needs to develop a vigorous and rigorous research community, peopled with *both* those who consider themselves primarily researchers and primarily practitioners. They need to work together in solving information problems and when working alone to keep in mind the needs of both groups.¹

Such concerns are couched in controversies about the degree to which LIS is a vocation, profession, or discipline. The authors recognize the existence of these controversies and realize that such debates affect one's perspective concerning the status of research in LIS. They also re-

alize that these debates are likely to continue and cannot be resolved in this article. Nonetheless, if LIS is to progress as a discipline, it behooves the members of the profession to consider carefully the status of its research.

The notion of "the status of research" in LIS is obviously multidimensional. Primarily, the dimensions of status explored in this study were quantity, quality, impact, and importance of research. Further, there are admittedly differing views as to what exactly constitutes research and what exactly is LIS.

For the purposes of this article, LIS was defined by the users of the term themselves—either in the literature or during data collection. In other words, this study made no attempt to foist a particular definition on either the literature or

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the participants in the study. However, the term "research" is used broadly to mean any systematic and formal effort (basic or applied) to create new knowledge or produce new information. It is also used to suggest a degree of attention to method and rigor in obtaining and analyzing information that goes beyond writings best described as "opinion pieces."

The objectives of the study were to:

- obtain a current assessment of the status of research in LIS from a sample of prominent researchers in LIS;
- identify key issues affecting the status of research in LIS and increase the profession's awareness of these issues;
- suggest strategies by which the status of research in LIS might be improved.

Accomplishing such objectives may contribute to a better understanding of the role and importance of research in LIS and strengthen the research basis of the profession.

BACKGROUND

This section provides a context for the study and is not intended to be a comprehensive review of the literature on the status of LIS research. Readers wishing a more complete introduction to this topic can review the 1984 issue of *Library Trends* dealing specifically with research in LIS,² Freeman's 1985 review of issues surrounding research in librarianship,³ the papers of a 1986 international symposium on research and the practice of librarianship,⁴ or a paper presented by Kater at a Library Research Round Table Forum of the 1987 American Library Association annual meeting.⁵

Indicators of Quantity, Quality, and Importance of Research Activity

A number of "research activity indicators" can be proposed which, if charted over time, could give an indication of trends in the overall quantity, quality, and importance of LIS research. Much of the empirical data needed to produce these measures, however, has either not been collected or has not been presented in a useful manner. Existing reports are rarely longitudinal, nor do they present data in a form comparable with earlier studies or make enlightening comparisons with

studies in other disciplines. Table 1 summarizes key findings and conclusions from selected empirical studies related to the status of research in librarianship.

Quantity, in the sample of literature reviewed, has been variously assessed in terms of the output per LIS faculty or student, or the percentage of a particular group of LIS publications that might be considered "research." A review of the results would probably lead one to the conclusion that while research output is far from prodigious, it may be increasing. Findings presented in table 1 by White and Momenee, Varlejs and Dalrymple, and Garland and Rike can be put into context by comparing them with each other as well as with data from other disciplines. Conclusions must remain tentative at best, however, because many of the data are not strictly comparable.

In an overview of several studies comparing the research output of faculty in a variety of disciplines, Yunker states that "most faculty members produce few or no scholarly works."⁶ Fulton and Trow found that the percentages of respondents on university faculties who reported publishing at least one scholarly or research article in the previous two years, by field, were:⁷

- 87% Biological science
- 80% Medicine and Law
- 78% Social sciences
- 74% Engineering
- 64% Business
- 62% Education
- 60% New and semiprofessions (includes library science, nursing, and social work)
- 47% Fine arts

Comparing this 1969 study representing two years of publication activity to 1983 data from Varlejs and Dalrymple covering one year of activity (see table 1) is difficult. However, the 51 percent of LIS faculty with at least one "scholarly publication" in 1983, as shown in the Varlejs and Dalrymple study, falls within the range of publication activity of other disciplines as reported by Fulton and Trow.

Empirically derived studies of the variety and sophistication of methods employed by LIS researchers imply a rela-

tionship between variety and sophistication of method and overall research quality. The studies by Van de Water et al., White and Momenee, Wallace, and Feehan et al. (see table 1) seem to indicate that most research is applied in nature, that descriptive techniques continue to predominate over predictive techniques, and that methods of observation remain heavily concentrated in survey and historical techniques.

Several studies listed in table 1 shed light on the perceived importance of research in the library profession. Devinney and Tegler suggest that most practitioners are not interested in performing research. Similarly, White and Momenee found that almost 25 percent of those holding an LIS doctorate indicated that they had no interest in doing research unless it was required. Further, Houser and Schrader found that LIS master's students received little exposure to actual research, suggesting that the teaching of research in LIS schools is not a high priority. Atkins' descriptive analysis of trends in the subject matter of library research articles in the period from 1975 to 1984, however, would seem to indicate a significant interest in library research on the part of LIS journal authors, editors, and readers.

The evidence presented in the studies described in table 1 suggests the following general conclusions:

- there is room for substantial improvement in the quality, quantity, and perceived importance of LIS research
- quality, quantity, and importance have not risen dramatically in the last decade
- the status of research in LIS may be a function of the nature of an emerging profession
- the collection and dissemination of data used to calculate "research activity indicators" could be improved

Although some writers see evidence of decline or improvement in the status of LIS research, data either to substantiate or to refute such claims are in very short supply.

Key Issues

Table 2 provides a summary of key issues as distilled from a review of the literature related to the status of LIS research.

The table suggests that even if a consensus were reached on the nature of the problems related to research in LIS, there is no guarantee that recommendations for improving the situation would be universally accepted.

One basic impediment to the promotion of research in LIS is that fundamental conflicts remain about the nature, role, purpose, and value of research in a professional field. Early assessments by Williamson⁸ and Shera⁹ note a fundamental antipathy in librarianship toward the application of scientific scrutiny to a profession steeped in idealism and to a practice based on art. Several commentators have noted that the field as a whole has a long history of being more concerned with preserving knowledge than with creating knowledge.

More recent writings by Lynch,¹⁰ Odi,¹¹ and Freeman¹² focus on defining research itself, discussing the appropriateness of various types of research, and stressing the need for research intended to develop theories, reveal basic "laws," and provide useful models. Keren,¹³ McClure,¹⁴ and Robbins¹⁵ focus on the (not necessarily conflicting) need for researchers to devote their efforts to the solution of problems currently besetting the profession. More broadly, in exploring the realm of social science research, Argyris et al.,¹⁶ Schön,¹⁷ and Lindblom and Cohen¹⁸ present provocative treatises on the creation and application of usable knowledge by professionals.

" 'our conservatism has severely limited the range of questions that can be investigated, and has rigidly defined the characteristics of a good answer.' "

Table 2 suggests that debates about the quality of research in LIS exist along several fronts. Many writers wonder whether researchers are asking the right questions, while others question whether the right methods are being used and whether they

TABLE 1
 THE QUANTITY, QUALITY, AND IMPORTANCE OF RESEARCH:
 A SAMPLE OF FINDINGS FROM LIBRARY AND
 INFORMATION SCIENCE (LIS) LITERATURE

Year	Author	Key Findings/Conclusions
1988	Atkins ¹	<ul style="list-style-type: none"> • Research methods as a topic ranked 9th out of 58 observed topics in LIS in the period 1975-1984 • The number of articles on research methods diminished slightly over last couple of years
1987	Feehan et al. ²	<ul style="list-style-type: none"> • In comparing own findings with those of Peritz (1977),³ Nour (1983),⁴ and Eaton & Burgin (1984),⁵ found that the percentage of published LIS articles that might be considered "research" grew steadily 1950-75, peaking at 35%, and that the period 1976-84 shows steady or declining research percentage • Methods and subjects of LIS research literature 1950-84 are varied, but emphasis remains on applied aspects • Methods could be more sophisticated: heavy emphasis in 1984 on historical, survey, descriptive techniques
1987	Garland & Rike ⁶	<ul style="list-style-type: none"> • 41% of LIS faculty sample did not produce any scholarly publications in the period 1980-84 • Only 14.4% produced more than three items in the period 1980-84 • The authors report a relationship between a faculty member's scholarly output and (among several others): highest degree earned, teaching load, type and prestige of academic program, and number of faculty in academic unit
1987	Kinnucan et al. ⁷	<ul style="list-style-type: none"> • Many examples of well-conducted statistical tests and procedures were found in information science literature ca. 1982-87, but examples of the misuse of statistics were also uncovered • Authors conclude that it is less important that statistics are used than that they are used well
1987	Pierce ⁸	<ul style="list-style-type: none"> • Reviews a number of recent LIS citation studies, such as those conducted by Schrader (1985),⁹ Nour (1985),¹⁰ Sellen (1984),¹¹ and Bonzi (1982),¹² and concludes that the structure of knowledge in library and information science is typical of many professions: lack of unifying paradigm leads to a lack of consensus on problem definition and approaches to solutions, no accepted knowledge base exists and knowledge does not cumulate, unhealthy insularity is reflected in tendency of researchers not to use materials from other fields and in the division of journal literature into practitioner and research "camps"
1986	Varlejs & Dalrymple ¹³	<ul style="list-style-type: none"> • Only 51% of LIS faculty published at least one item (not necessarily research) that was indexed in 1983
1985	Watson ¹⁴	<ul style="list-style-type: none"> • In an analysis of 1,537 articles appearing in 11 major journals in the field of librarianship during the period 1979-83, it was found that academic librarians were the most productive class of authors followed by library science faculty • No marked difference in productivity was found between those librarians required to meet true faculty standards (including research and publication) and those not required to produce or publish research
1985	Wallace ¹⁵	<ul style="list-style-type: none"> • LIS articles use fewer inferential statistics than literature in education, social work, and business, which in the author's opinion indicates a lack of rigor and sophistication
1983	Coughlin & Snelson ¹⁶	<ul style="list-style-type: none"> • Only 33.3% of the papers presented at the first ACRL conference in 1978 and 31.5% of the 1981 papers could be considered research papers, even though the intended orientation of the conference is scholarly
1983	Devinney & Tegler ¹⁷	<ul style="list-style-type: none"> • In a 1980 survey, a sample of N.Y. librarians ranked "writing

TABLE 1 (CONTINUED)

THE QUANTITY, QUALITY, AND IMPORTANCE OF RESEARCH:
A SAMPLE OF FINDINGS FROM LIBRARY AND
INFORMATION SCIENCE (LIS) LITERATURE

Year	Author	Key Findings/Conclusions
		for publication," the only research-oriented activity on the list, 18th in importance out of 27 activities
1978	Houser & Schrader ¹⁸	<ul style="list-style-type: none"> Exposure of library and information science master's students to actual research reports is minor, suggesting that practitioners engaging in their own research will be hampered by a lack of familiarity with their field's research tradition and with current research practice
1978	White & Momenee ¹⁹	<ul style="list-style-type: none"> Those who earned LIS doctorates from 1930 to 1975 produced on the average less than one published research report per postdoctoral year Only 22.6% of doctorates used even partially experimental methods; 28.6% were historical; 33.5% were surveys
1976	Van de Water et al. ²⁰	<ul style="list-style-type: none"> Replicates Atherton's (1973)²¹ study of research methods in published information science literature 1969-71 for 1974; finds that while the amount of research reported remained stable, the methods employed improved somewhat Nearly half of the research in both studies was descriptive and topics of study remained stable Attention to pretesting and use of quantitative analysis increased but attention to defining variables decreased

- Stephen E. Atkins, "Subject Trends in Library and Information Science Research, 1975-1984," *Library Trends* 36:633-58 (Spring 1988).
- Patricia E. Feehan and others, "Library and Information Science Research: An Analysis of the 1984 Journal Literature," *Library and Information Science Research* 9:175-85 (July-Sept. 1987).
- Bluma C. Peritz, "Research in Library Science as Reflected in the Core Journals of the Profession: A Quantitative Analysis (1950-1975)" (Ph.D. diss., Univ. of California, Berkeley, 1977).
- Martyvonne M. Nour, "Research in Librarianship: An Analysis of Research Articles in Core Library Journals of 1980" (Master's thesis, Univ. of North Carolina at Chapel Hill, 1983).
- Gale Eaton and Robert Burgin, "An Analysis of the Research Articles Published in the Core Library and Information Science Journals of 1983" (Research paper, School of Library Science, Univ. of North Carolina at Chapel Hill, 1984).
- Kathleen Garland and Galen F. Rike, "Scholarly Productivity of Faculty at ALA-Accredited Programs of Library and Information Science," *Journal of Education for Library and Information Science* 28:87-98 (Fall 1987).
- Mark T. Kinnucan and others, "Statistical Methods in Information Science Research," in *Annual Review of Information Science and Technology* 22, ed. Martha E. Williams (Amsterdam: Elsevier Science Publishers B.V., 1987), p.147-78.
- Sydney J. Pierce, "Characteristics of Professional Knowledge Structures: Some Theoretical Implications of Citation Studies," *Library & Information Science Research* 9:143-71 (July-Sept. 1987).
- Alvin M. Schrader, "A Bibliometric Study of the JEL, 1960-1984," *Journal of Education for Library and Information Science* 25, no.4:279-300 (Spring 1985).
- Martyvonne M. Nour, "A Quantitative Analysis of the Research Articles Published in Core Library Journals of 1980," *Library & Information Science Research* 7, no.3:261-73 (1985).
- Mary K. Sellen, "Bibliometrics in Information Science: A Citation Analysis of Two Academic Library Journals," *College & Research Libraries* 45, no.2:129-32 (1984).
- Susan Bonzi, "Characteristics of a Literature as Predictors of Relatedness Between Cited and Citing Works," *Journal of the American Society for Information Science* 33:208-16 (1982).
- Jana Varlejs and Prudence Dalrymple, "Publication Output of Library and Information Science Faculty," *Journal of Education for Library and Information Science* 27:71-89 (Fall 1986).
- Paula D. Watson, "Production of Scholarly Articles by Academic Librarians and Library School Faculty," *College & Research Libraries*, 46, no.4:334-42 (July 1985).
- Danny P. Wallace, "The Use of Statistical Methods in Library and Information Science," *Journal of the American Society for Information Science* 36:402-10 (1985).
- Caroline Coughlin and Pamela Snelson, "Searching for Research in ACRIL Conference Papers," *The Journal of Academic Librarianship* 9:21-26 (March 1983).
- Gemma DeVinney and Patricia Tegler, "Preparation for Academic Librarianship: A Survey," *College & Research Libraries* 44, no.3:223-27 (May 1983).
- L. Houser and Alvin M. Schrader, *The Search for a Scientific Profession: Library Science Education in the United States and Canada* (Metuchen, N.J.: Scarecrow, 1978).
- Herbert S. White and Karen Momenee, "Impact of the Increase in Library Doctorates," *College & Research Libraries* 39:207-14 (May 1978).
- Nancy Van de Water and others, "Research in Information Science: An Assessment," *Information Processing & Management* 12, no.2:117-23 (1976).
- Pauline Atherton, "Research in Information Science: An Assessment," in *Perspectives in Information Science: Proceedings of the NATO Advanced Study Institute on Perspectives in Information Science, 1973*, ed. Anthony Debons and William J. Cameron (Leyden, Netherlands: Noordhoff International Publishing, 1975), p.665-83.

TABLE 2
KEY ISSUES CONCERNING
RESEARCH IN LIBRARY AND INFORMATION SCIENCE (LIS)

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1. What is the nature, purpose, role, and value of research in a profession?
 - What are the definitions and relative merits of, for example, basic research, applied or action research, and demonstration and development projects?
 - What has been the effect of the profession's quest for status through research?
 2. What is the current status (i.e., quality, quantity, perceived importance) of LIS research? How have we progressed in the last 50 years? In the last 10 years?
 - Is enough research being done, and is the research being done in appropriate areas?
 - What is the quality of research currently being done?
 - Are the right questions being asked?
 - Are the right methods being used? Are the methods being used correctly?
 - Are we taking advantage of advances in related disciplines?
 - If the current status is deemed inadequate or inappropriate, what are the causes of this situation?
 - How can the status of research be evaluated? Can objective measures of the quality, quantity, and perceived importance of research be developed?
 3. What are the appropriate relationships between researchers and practitioners?
 - Who should be engaged in research?
 - Is it reasonable to expect practicing librarians to be engaged in research activities?
 - Have academic educators/researchers lost touch with the "real world"?
 - Are the needs and expectations of practitioners and their institutions driving research? If so, what are the effects of this on the profession?
 - Should libraries be used as "laboratories" for conducting research?
 4. What is the current state of LIS research education?
 - Are MLS and Ph.D. students receiving appropriate and adequate training?
 - Are educators themselves adequately prepared to teach/train their students?
 - What is the relationship between research in information science and librarianship? Between other disciplines and librarianship? What relationships should exist?
 5. What have been the effects of professional associations, funders' interests, and publishing norms on research?
 - Should the professional associations be taking a more active role in promoting research?
 - Are funders supplying adequate support? Are they exerting too much control?
 - Should publishers and editors be taking a more active role in promoting the publication of research? Should they take more responsibility for ensuring the quality of the research they publish?
 - What is the effect of the pressure being exerted on both practitioners and faculty to conduct and publish research?
 6. What are the best ways to encourage high-quality research?
 - To what degree do individual motivation and institutional reward encourage research productivity?
 - Who should take a leadership role in promoting research?
 - How can the education of both librarians and researchers be changed to improve their preparation for consuming or conducting research?
 - Do "research agendas" promote or discourage research?
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are being used correctly. Harris, for example, maintains that LIS has:

systematically isolated itself from contact with significant empirical and theoretical developments in the social sciences. . . . our conservatism has severely limited the range of questions that can be investigated, and has rigidly defined the characteristics of a good answer.¹⁹

Freeman²⁰ provides an overview of many of the recurring methodological debates. One that remains particularly fierce is whether quantitative, especially statistical, methods are an underutilized, poorly

understood tool or whether the field's emphasis on such techniques is misguided, actually presenting a barrier to significant advances in research and practice.

One key area of debate is determining responsibility for encouraging or impeding the production of high-quality research in LIS. Blame has been laid at the feet of:

- educators, for providing inadequate or inappropriate research training;
- practitioners, whose needs and requirements for, expectations of, and contri-

butions to research are often characterized as lamentable;

- academic researchers, for their lack of creativity, practicality, rigor, and perseverance;
- university administrators, for failing to supply adequate resources and not understanding the role of research in a professional school;
- professional associations and journals, for their failure to assume a proactive stance in encouraging and recognizing research; and
- funding agencies, for failing to provide the needed financial support and choosing inappropriate vehicles and targets for their support.

Indeed, much of the writing in this area seeks more to assign blame than to present solutions.

The purpose of table 2 is to convey the complexity and interrelationship of issues surrounding the status of research in LIS and not to serve as a comprehensive listing of all issues. The question of whether research deserves any place in the profession appears to have been more or less resolved in the affirmative. However, the complexity and interdependence of issues suggests a holistic approach is necessary for improving the status of research in LIS.

STUDY DESIGN AND METHODOLOGY

The research questions that guided the development of the study design and methodology were:

- What is the general assessment of the quality and quantity of research in LIS since 1980?
- Has our basic knowledge of phenomena associated with LIS improved since 1980? Will the knowledge base of LIS increase significantly in the next five years?
- To what degree has research in LIS affected the profession since 1980?
- What factors hinder or help research productivity?
- What strategies would improve the status of research in LIS?

After comparing the strengths and limitations of different designs and reviewing

the literature issues as summarized in tables 1 and 2, the authors decided to conduct telephone interviews with individuals who are active researchers in LIS.

Therefore, the investigators developed a preliminary list of individuals who met at least two of the following three criteria:

- proven, ongoing track record of producing research reports, papers, and monographs
- regular activity in obtaining and completing funded research projects
- active and regular participation as an editorial board member or editor for scholarly journals in LIS and/or membership on research-related committees in professional associations or other organizations

External reviewers of the list suggested minor changes that resulted in a final list of twenty-three prospective interviewees. The majority of the individuals were LIS educators, although individuals from other institutional settings also were included. The majority of the group would be considered as practitioners more of library science than of information science. The chosen individuals represented a wide expanse of subject knowledge and a broad range of research expertise, and were from both the United States and Canada.

A letter to the twenty-three individuals asked for their participation in the study, provided them with background information, and listed "lead questions" that would guide the interview. They were asked to return a confirmation form indicating whether they would agree to be interviewed, and if agreeing, a first and second choice for an interview time.

All twenty-three individuals agreed to participate in the interviews, which took place in November 1988. Typically, the interviews began with a brief explanation of the study and a definition of key terms such as "research," and lasted thirty to forty minutes—although some extended to an hour. The research questions guided the interview, but interviewees were free to deviate from these questions and address related topics. One of the authors conducted the interview and made brief notes. The other listened to the entire in-

terview (with the knowledge of the interviewees) and made extensive notes recording responses and comments.

Prior to the interviews, the investigators prepared a data collection form that served to (1) guide the interview and (2) record the responses and comments from the participants. After the interview was completed, the two investigators compared their notes and discussed what each believed were the key points resulting from that interview. After all the interviews were completed, one of the authors summarized the data collection forms. The other investigator reviewed the draft; then both discussed the summary together. This approach was used to increase the accuracy of the reporting.

“. . . there continues to be a small but growing number of ‘hard-core’ researchers in LIS who are regularly conducting research and increasing the field’s knowledge base.”

This study design has the strength of obtaining perceptions of a group of individuals who are especially knowledgeable about the topic, allowing the investigators to ask follow-up questions, and encouraging the interviewees to be open and candid about their assessments. However, respondents may use noncomparable criteria in making assessments. In addition, these assessments come from a unique group of individuals whose background and educational training are not representative of the profession as a whole.

FINDINGS

Overall, the interviewees believed that there continues to be a small but growing number of “hard-core” researchers in LIS who are regularly conducting research and increasing the field’s knowledge base. In the following sections the findings from the study are summarized. Where possible, an attempt was made to validate the perceptions of the respondents through

the use of other sources of information. Generally, there was a sense of guarded optimism about the status of research in LIS.

Quantity of Research

The respondents agreed by a 3 to 1 ratio that the overall quantity of the published research had increased since 1980. Many noted, however, that while the amount has increased, much of it has been of poor quality. As a check on the perceived increase in the quantity of the research being reported since 1980, an analysis of the literature in the ERIC database was conducted. These findings are reported in figure 1. For each year from 1981 to 1987, the ratio of items the database identifies as “research reports” compared to all items entered into ERIC for that year was computed. Three different search strategies were used (1A, 1B, and 1C) to identify the number of research reports in LIS. Recognizing that this approach constitutes only one possible technique, figure 1 supports the views of the respondents that the overall quantity of the research appears to be increasing.

Some of the respondents thought that a key factor affecting the increased quantity of research was the pressure being placed on many academic librarians to publish as part of the promotion and tenure process. But that view could not be validated by other sources. Indeed, Watson concluded in a 1985 study:

Except in the case of Illinois (Urbana-Champaign), there is not a marked difference in [publication] productivity between those [academic librarians] who must meet true faculty standards (including research and publication) and those who need not.²¹

However, it is possible that this situation has changed since these 1983 data were collected and that academic librarians in 1988 are publishing more because of demands of faculty status.

Respondents also noted that since the late 1970s a number of new professional journals had appeared in LIS. Some of these new journals, such as *Library and Information Science Research*, contributed to both an improvement in quality and an in-

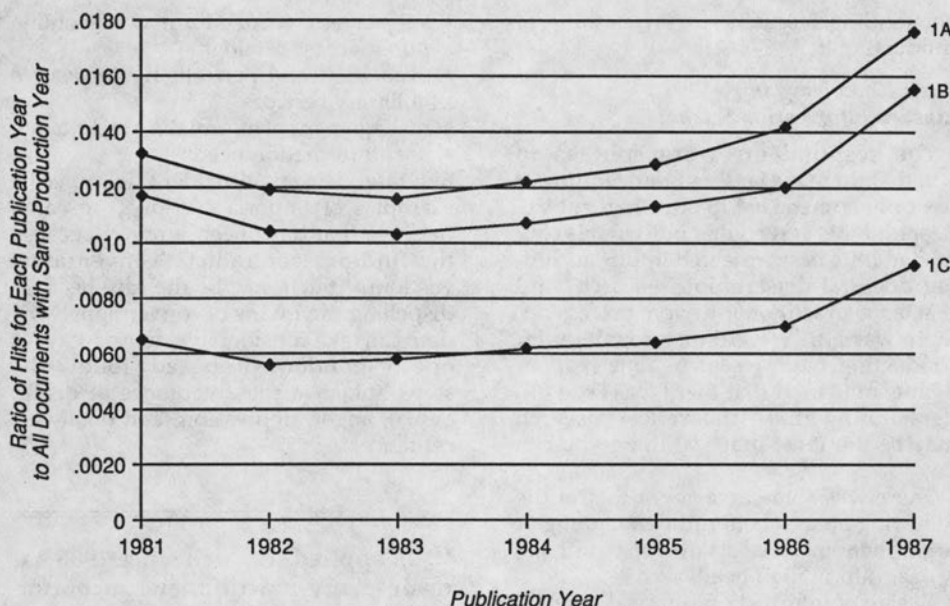


FIGURE 1
Library/Information Science Research Documents in
Proportion to All Documents in the Database

crease in quantity of the research. Others, it was felt, diluted overall quality and simply offered a home for opinion pieces. This was seen as a response to (1) pressures on academic librarians to publish and (2) increased emphasis on research productivity for LIS school faculty.

Quality of Research

The assessments of the overall quality of LIS research since 1980 were almost evenly distributed among "poor," "satisfactory," and "good." No one judged the quality of research as "excellent." The assessments were made recognizing that "quality" is a multidimensional concept and that the quality of LIS research likely varied within different research areas. The term that many respondents accepted as a description of the quality of LIS research was "mediocre."

Respondents believed, however, by a ratio of 2 to 1 that the quality of LIS research had improved somewhat since 1980. This view is shared by a number of writers and a past editor of *College & Re-*

search Libraries, who recently concluded "the quality of manuscripts is improving, and librarians are using more sophisticated methodologies in their research."²² A possible factor affecting the quality of the published research, in the view of the respondents, was, again, the increased pressure on many academic librarians to publish. Some of the respondents commented that this pressure, combined with more and better refereed journals, may have improved the quality of research—at least in the refereed journals.

A mitigating factor regarding the quality of LIS research, in the opinion of the respondents, is that the profession as a whole is poorly equipped to recognize and strive for research quality. Such is evidenced by much confusion that exists between what constitutes a research publication versus an opinion piece. They also pointed out that the vast majority of those in the profession never received training in conducting research, only a handful of the profession obtains a Ph.D. degree, and many MLS graduates never take courses to assist them in consuming or un-

derstanding research—to say nothing of conducting it.

Basic Knowledge in Library/Information Science

The respondents were split as to whether there is a better understanding of basic phenomena in LIS now than in 1980. Respondents agreed that individuals conducted little basic research in LIS, including doctoral dissertation research, and that as a practitioner-driven profession, there was little reward or recognition for conducting basic research. One respondent commented that there was little understanding that "theoretical research may be the most practical thing you can do."

There was some agreement that in the following areas a better understanding of basic phenomena exists now than in 1980:

- user information needs
- design of information retrieval systems
- knowledge representation

Respondents agreed that little attention is given to theory development or the building of basic knowledge. Further, there was concern that researchers have not drawn effectively on basic knowledge and theory from related fields.

Applied Knowledge

In the view of the respondents, the vast majority of research activity is directed to applied or action research, that is, research with immediate payoffs for decision making and practice. Many respondents commented that this type of research in LIS, however, is repetitive, deals with trivial problems or issues, lacks a conceptual framework, and fails to integrate or build on findings from other studies or basic knowledge from related disciplines.

The investigators asked, "To what degree has LIS research affected the profession" in terms of changing practice, attitudes, or specific professional activities? None thought that there had been no impact, but most described the amount of impact as "only a little" or "some." Areas of applied research that the respondents identified as having had an impact on the profession were:

- subject retrieval of information in online public access catalogs
- evaluation and performance measures of library services
- management of information technology
- user information needs

But interviewees also identified specific examples of important applied research findings that have been ignored because the findings contradict "conventional wisdom." Such may be the case because dispelling the myths of conventional wisdom can take considerable time or may, as one respondent proposed, follow the steps linked to the acceptance of death: denial, anger, depression, and finally acceptance.

“. . . applied research since 1980 has made many practitioners uncomfortable about their current practices and has forced them to question some of their basic assumptions regarding the management of libraries and the provision of information services.”

A majority of the respondents felt that applied research since 1980 has made many practitioners uncomfortable about their current practices and has forced them to question some of their basic assumptions regarding the management of libraries and the provision of information services. The respondents agreed that impact was limited because (1) many researchers do not present their findings in such a way that practitioners can apply them and (2) many practitioners are unable to understand or intelligently consume the results of research.

Awareness of LIS Research

Respondents also suggested that the overall awareness and perceived importance of research in LIS had improved since 1980. As indicators of this assessment they pointed to:

- better and more refereeing of articles in some of the professional journals

- increased number of committees of a "research nature" in the American Library Association (ALA)
- establishment of a number of research awards and honors in ALA, the Association for Library and Information Science Educators (ALISE), and the American Society for Information Science (ASIS)
- increased in-house library applications of evaluation research designs as a means to allocate or justify resources
- greater attention to research-oriented sessions at the ALA Annual Conference and the Association of College and Research Libraries (ACRL), Library and Information Technology Association (LITA), and Public Library Association (PLA) divisional conferences

Some of these perceptions are, in fact, supported by evidence available from the various professional associations.²³ Some respondents questioned the effectiveness of these efforts in fostering more and better research, but they did agree that such efforts were increasing the profession's awareness of research activities.

Size of the Library/Information Science Research Community

The investigators asked for an estimate of the size of the research community in LIS—defined as individuals who are regularly involved in research projects and who consistently publish research papers and reports (as opposed to opinion pieces). The size estimates ranged from "about 50 or less" to "maybe as many as

2,000." However, a majority of respondents assessed the size as fewer than 300 researchers.

A key issue raised by a number of respondents in discussing this question was the lack of a "critical mass" of researchers who are, in fact, involved in regularly conducting LIS research. The American Library Association estimates a total of 153,000 "librarians and other professionals" in the United States²⁴—thus the ratio of researchers to the entire professional community appears to be very small indeed.

Respondents consistently commented on the profession's limited ability to conduct research because so few have had Ph.D. training. In an attempt to confirm this perception, the authors tabulated the number of Ph.D. degrees granted for selected fields as reported by *Dissertation Abstracts International* from 1980 to 1987. Table 3 reports these findings and suggests that, in fact, a very small number of Ph.D.s are awarded each year in the areas of library and information science.

Comparing the number of doctorates awarded by field addresses the critical mass issue. Another interesting indicator would be the ratio of Ph.D.s to professional degrees in these various fields, e.g., ratio of LIS Ph.D.s to MLS degrees, management Ph.D.s to MBAs, social work Ph.D.s to MSWs, etc. Such data were not computed for this study. Nonetheless, the number of LIS Ph.D.s appears especially small in comparison to other fields as shown in table 3 and supports the percep-

TABLE 3
DISSERTATIONS PER YEAR IN SELECTED FIELDS

	Information Science	Library Science	Education	Management	Social Work	Sociology	Computer Science
1980	20	73	7,654	44	207	1,022	444
1981	29	89	7,420	152	193	1,014	356
1982	31	87	7,351	172	214	950	377
1983	34	70	7,151	202	236	887	415
1984	45	82	6,680	229	213	878	442
1985	33	68	6,695	312	209	1,007	507
1986	48	73	6,830	363	261	955	590
1987	71	75	6,516	433	340	1,249	769
Total	311	617	56,297	1,907	1,873	7,962	3,900

Source: *Dissertation Abstracts International* (Ann Arbor, Mich. University Microfilms International), V. 41-48: 1980-1987.

tion that there is not a critical mass of researchers in LIS.

Factors Affecting Individual Research Productivity

Most respondents agreed that the single most important factor in encouraging research productivity is one's personal motivation to conduct research. Aspects of this motivation included the presence of an interest in understanding the "whys" of LIS, a questioning and inquiring mind, and perseverance on the part of the researcher.

A number of interviewees lamented the general lack of funding to support "large-scale" research in LIS, the lack of available time, the burden of administrative work, lack of research assistants, and the other hindrances to conducting research that Wilson has detailed.²⁵ Many more, however, simply noted that they could not imagine *not* doing research, regardless of the specific situation and general support for research. Indeed, one of the respondents commented that excuses were easy to find, but that if someone *wanted* to conduct research, he/she would *find* a way to do it—"primarily, it is a matter of personal choice."

Many of the respondents believed that the profession, as a whole, suffered from a lack of curiosity and limited interest in understanding the "whys" that would generate a knowledge base for LIS. There also was some concern about forcing academic librarians to publish and "conduct research" for promotion and tenure when most lacked the knowledge and skills, the time, and the interest. Such requirements for promotion and tenure do not directly address the issue of personal motivation, that is, they attack the symptoms but not the cause of the problem. The respondents believed that more fruitful strategies exist to motivate academic librarians and LIS school faculty to conduct research regardless of other job responsibilities.

Outlook for the Future

"Guarded optimism" best describes the overall assessment of the interviewees regarding the future status of research in LIS

over the next five years. In general, the majority of the interviewees thought that the quality of LIS research might continue to improve somewhat, the quantity of research would increase, basic knowledge of library/information science would probably stay the same, and an increasing amount of applied research would eventually have a greater impact on the profession.

Factors that interviewees identified that would contribute to a decline in the status of research in LIS over the next five years included:

- inadequate numbers of Ph.D.-level LIS educators and practitioners
- inadequate training on the part of academic librarians who are expected to conduct research and publish
- inability to bring together a critical mass of researchers to work on a particular research problem over a long period of time
- continued confusion within the profession regarding the differences between research publications and opinion pieces
- limited funding opportunities to support LIS research and concern about federal agencies setting agendas for research in LIS

Factors that interviewees thought might contribute to the improved status of LIS research over the next five years included:

- better tools available to support research, e.g., easier access to microcomputers and to data sets from, for example, automated library systems
- increased demands on library/information managers to be accountable for resource allocation decisions and to justify library services, necessitating increased applied research
- higher standards for refereed journals and the increasing number of journals that are refereed
- continued pressure from academic institutions on both LIS educators and academic librarians to conduct research and publish in refereed journals
- increased awareness of the importance of research
- improved reward structures for those doing research

The guarded optimism was frequently stated as "for such a small research community, with such little support, in a profession so heavily driven by practitioner concerns, it is surprising that we know as much as we do and that the existing level of research activity exists."

Respondent Views versus Recent Literature

The opinions expressed by the researchers interviewed for this study suggest a view of the status of research in LIS somewhat different than that expressed in recent journal literature. First, the interviewees were much less concerned with classifying and assessing the appropriateness of types of research. As a group, they seem to advocate more and better research, regardless of its being basic or applied, and regardless of the type of method employed.

Second, the interviewees were less concerned with placing blame on a particular group or constituency for poor quality, lack of interest in research, etc. Rather, they shifted criticism toward the institutional and professional factors that affect the status of research in LIS overall. In short, they considered the topic of research in LIS from a broader perspective than did the literature.

Third, the interviewees produced a remarkable array of recommendations for improving the status of research in LIS—only some of which are included in this paper. In contrast to the literature, where specific recommendations are poorly developed or not offered, the researchers saw a broad landscape of opportunities where strategies could be developed and implemented for improving the status of research.

Fourth, the researchers were less interested (though not uninterested) in resolving the philosophical issues identified in the literature and summarized in table 2 than in dealing with some of the issues described in this section. Such may be the result, in part, of the interview format and questions. However, there was a clear sense from the researchers of the importance of *doing research* rather than merely talking about it or debating philosophical

“. . . the researchers stressed the importance of internal or personal motivations as the critical success factor in being productive.”

issues about, for example, what constitutes research in LIS.

Finally, there was a significant difference between the opinions of researchers participating in this study and the published literature in the evaluation of factors affecting research productivity. While the literature places heavy emphasis on external factors such as lack of funding, limited time, and too many other responsibilities and commitments, the researchers stressed the importance of internal or personal motivation as the critical success factor in being productive.

ISSUES AND RECOMMENDATIONS

From these interviews a pattern of key issues and recommendations emerged. This section identifies five issue areas that appear to be especially important regarding the status of research in LIS. Within each issue area, possible strategies to resolve key issues are offered. The recommendations represent a combination of ideas from the respondents and the investigators.

Image and Importance of Research

Underlying many of the concerns related to the status of research in LIS are issues of image and perceived importance. Image and perceived importance of research can be improved by all the recommendations listed in this section, but specific recommendations include:

- encourage the directors of large academic libraries and the deans of schools of LIS to examine the infrastructure currently supporting LIS research and develop strategies for enhancing that infrastructure
- allocate a small percentage of the library budget specifically to support research projects within the library
- increase the visibility of successful and

important LIS research, perhaps by orchestrating a series of regional meetings or workshops that culminate in a national conference

- establish and fund "centers of excellence" for research in leading schools of LIS to bring together a critical mass of researchers to concentrate on a particular area of research
- establish a national commission of LIS researchers and practitioners to articulate the importance, role, and impact of research in LIS (not to be confused with establishing a national agenda for research)
- create peer-reviewed awards, honors, and other reward structures to recognize high-quality and important research in LIS
- establish within libraries and other appropriate organizations an "Office for Research and Development" to focus available resources on specific research problems

As yet, LIS has not moved much beyond Pierce Butler's assessment of the field as a practice-based vocation.²⁶ Increased efforts are needed to articulate the importance and improve the image of research as a bona fide activity that has a wide range of benefits for the profession as a whole.

Research Competencies

This issue is largely an educational one. While it is possible that this situation is improving, examples of the lack of research competencies include inability to recognize good research, discounting of all research because it is not understood, inability to conduct a quality research project, inability to differentiate between research and opinion pieces, and general lack of sophistication in the use of research methods. Such concerns should not be surprising, however, because as a scholarly discipline LIS is still in its infancy.

If the profession wishes to improve the level of research competencies, a number of strategies are possible:

- strengthen LIS Ph.D. programs in research design and methods and have doctoral students actively participate in a range of research projects as part of

their required program

- institute required courses at the MLS level on both the conducting and consuming of research
- develop an ongoing program of research instruction *within* the library where researchers instruct professional staff in the identification of a research problem and the process of developing and implementing a research design to address that problem
- encourage faculty at schools of LIS to take refresher courses in research methods from related disciplines, e.g., education, public administration, psychology, sociology, communication
- institute a program of certification and/or recertification of academic librarians (that includes research skills) similar to that developed by the Medical Library Association
- encourage LIS researchers to work on cross-disciplinary research teams or obtain the involvement of researchers outside LIS

Improvements to the research competency of the profession will not result from attendance of one-day workshops. A *program* of instruction over a period of time is necessary if one is to understand the research process and learn research skills.

Strengthening Commitment to Research in Professional Associations

There is evidence of increased attention being given to research in the professional associations, but much remains to be done. There are numerous professional associations at the state, regional, national, and international levels where improvements can be made. Professional associations can improve the role and status of research by:

- clearly articulating the association's role regarding research and expanding or strengthening association objectives related to research activities
- establishing and/or increasing the number and/or amount of funds to support research activities
- establishing and/or increasing the number of awards and honors to recognize high-quality research activities
- increasing the number of programs and

conferences that are research-oriented or otherwise draw increased attention to research in LIS

- expanding and refining research-based criteria for the accreditation of schools of LIS

These approaches not only would increase the visibility of research in the profession, they would also strengthen reward structures for research involvement.

Communication between Researchers and Practitioners

A key issue is the limited ability of researchers and practitioners to communicate effectively about conducting and using research. McClure²⁷ and Robbins²⁸ have discussed this issue and made suggestions for its resolution. However, the key ingredient here is a *desire* to improve communication and an *attitude* that such communication can result in learning on the part of both groups.

A recent paper noted that the LIS professional literature appears to be composed of two separate literatures, one developed and read by practitioners, and a second developed and read by researchers. There is virtually no cross-fertilization between these two literatures.²⁹ Researchers must improve their ability to communicate their research results to practitioners, and practitioners must improve their ability to understand and apply the research being produced.

Effective communication between researchers and practitioners is not a new problem, but it is one for which there are a number of remedies:

- produce two versions of a research report, one for a refereed journal, and a second that stresses applications and impact
- modify reward structures for LIS educators to encourage research dissemination activities and publication of research summaries in nonrefereed journals
- develop fellowship programs where LIS educators work on-site in academic libraries and academic librarians work on-site in LIS schools on specific research projects
- encourage journal editors to include

regular columns that identify and summarize recent research papers and projects (an example being the column "Recent Research" that appeared in *Library Journal* during 1988)

- improve the refereeing process and clarify procedures and criteria for LIS journal referees as outlined by Glogoff³⁰
 - encourage joint research projects between researchers and practitioners such as the Cooperative Research Program sponsored by the Council on Library Resources
 - broaden opportunities for researchers and practitioners to meet together and discuss issues and topics related to LIS
- Resolving the issues surrounding improved communications between researchers and practitioners is central to improving the status of research in LIS.

Research on the Status of LIS Research

The last category of issues centers around the need to continue investigating the general topic of the status of research in LIS. Table 2 is both a summary of selected key issues and a preliminary list of research questions on the topic. More attention should be given to conducting research that addresses these questions and to producing trend data of selected indicators of the status of research in LIS. Based on such data, a better understanding of the factors related to the status of research in LIS can be obtained. Further, such assessments can assist the profession in developing specific strategies which, over time, may improve the research base in LIS.

Moving Forward

The issue areas and recommendations discussed above underscore strategies for moving from a professional approach to LIS to an approach better characterized as disciplinary, i.e., developing and investigating a base of knowledge related to LIS. A discussion of specific attributes of a profession versus a discipline is beyond the scope of this paper and has appeared elsewhere.³¹ If, however, the status of research in LIS is to improve, greater attention to building a *discipline* of LIS will be necessary.

Clearly, the status of research in LIS is a matter of concern to the entire profession and not just a problem for individual constituencies such as schools of LIS, professional associations, practitioners, or researchers. But within these various groups, coordinated leadership is needed for improving the status of research in LIS. Who or what should be responsible for taking on this leadership role?

Currently, there are a number of key players in this arena: professional associations such as ALA, ASIS, and ALISE; private funding sources such as the Council on Library Resources; government agencies such as the National Science Foundation and the Department of Education; individual researchers and practitioners; and schools of LIS. Yet these key players

have yet to develop a coordinated approach, to marshal their resources, and to develop a feasible *program* for enhancing the status of research in LIS.

The findings from this study suggest numerous opportunities to strengthen the role of research in LIS. Overall, there is evidence to support the notion that the research base in LIS is gaining strength. What remains to be seen is the degree to which the members of this profession *can work together* to muster the leadership, commitment, and dedication to implement specific strategies such as those offered in this paper. These components are necessary in order to develop the discipline of LIS and improve the status of its research.

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