

DOCUMENT RESUME

ED 266 780

IR 051 433

AUTHOR Wood, Richard J.
TITLE The Impact of Online Information Retrieval and Library Automation on the Attitude of Faculty in an Academic Library.
PUB DATE Jan 86
NOTE 26p.
PUB TYPE Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Academic Libraries; Academic Rank (Professional); *Correlation; *Faculty; Higher Education; *Information Retrieval; *Librarians; Library Services; *Online Searching; *Reference Services; Surveys

IDENTIFIERS Faculty Status; *Slippery Rock University PA

ABSTRACT

A random-sample survey of 100 faculty members at Slippery Rock University of Pennsylvania was made to determine how online reference services and library automation affect the attitude of faculty toward several variables: (1) centralization or decentralization of online reference services; (2) willingness to learn to use and to pay for the services; (3) willingness to use trained reference librarians for searching the databases; and (4) attitude toward faculty status for librarians. The study had a 70% response rate and analysis by the Statistical Packages for the Social Sciences (SPSS-X) shows that faculty favor decentralization of online information retrieval services as long as the institution underwrites the cost; faculty are not willing to pay for the services themselves. However, a large percentage of the faculty also favor centralization of online services and will use trained librarians rather than learn how to use the services at their own expense. Faculty feel the online reference services enhance, not endanger, the faculty status of librarians. Faculty approve of faculty status and rank for librarians at Slippery Rock University where librarians have had faculty status and rank for many years. Associate and full professors, as well as those who say they use the library more frequently, show a better attitude in this regard. (Author/THC)

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ED266780

THE IMPACT OF ONLINE INFORMATION RETRIEVAL AND LIBRARY
AUTOMATION ON THE ATTITUDE OF FACULTY IN AN ACADEMIC LIBRARY

January 1986

BY:

Richard J. Wood, Ph. D.
Coordinator of User Services
Bailey Library
Slippery Rock University
Slippery Rock, PA 16057

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Richard J. Wood

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ABSTRACT

A random-sample survey of one-hundred faculty at Slippery Rock University of Pennsylvania was made to determine how online reference services and library automation affect the attitude of faculty toward (1) centralization or decentralization of online reference services, (2) willingness to learn to use and to pay for the services, (3) willingness to use trained reference librarians for searching the data bases, and (4) attitude toward faculty status for librarians. Whether there is a correlation between these variables and owning a personal computer and use of the library is also examined.

The data shows that faculty favor decentralization of online reference services as long as the institution is willing to underwrite the cost. Faculty are not willing to pay for the services out of their own pockets. But a large percentage of the faculty also favor centralization of online reference services and will use trained librarians rather than learn how to use the services at their own expense and time.

Faculty feel that online library reference services enhance, not endanger, the faculty status of librarians. Faculty are in favor of faculty status and rank for Slippery Rock University librarians. Only 5.7% of the respondents felt that online services and library automation endanger faculty status for librarians.

INTRODUCTION

A primary role of the reference librarian is to provide patrons with up-to-date and accurate information or bibliographic references. Until the 1970's, the vast majority of academic reference librarians have depended upon printed indexes, abstracts, bibliographies and other reference tools. Online reference and bibliographic data base services, more recently, however, have enabled librarians to accomplish their reference roles more effectively and efficiently.

Online reference services are especially important due to the interdisciplinary nature of knowledge. Also, as Russell Shank notes: "People will be oriented more toward information and access to it than to the media in which information is contained."¹ As the number of online data bases increase, it seems likely that online services in libraries will be regarded by faculty and administrators as indispensable. Or will it?

The facts are that not only can librarians perform online searches outside of the library but so also can faculty, students and administrators. Online services are now available to library users who have access to or who own a personal computer, modem, and telephone. Marquis Who's Who Directory of Online Professionals estimates that as many as 45,000 people are online professionals. A large percentage of these are librarians.

Whether or not this democratization of information retrieval will result in the disembodiment of the library is a subject of great controversy in library literature. Advances in information retrieval and telecommunication technologies already allow persons to gain access to online data bases so long as they have the proper hardware, modem, sign-on, and knowledge to operate the equipment and develop the search strategy. Online searchers must also, of course, be able to afford the costs.

Speaking of costs, Herbert S. White states that online searching is not necessarily more expensive than manual searching. He says:

...In some cases it is, in others not. The cost of manual searching, at least as performed by professional members of the library staff, is a prepaid expense, however, because it resides in salary commitments already made. Online searching represents an additional cost, usually unanticipated and unbudgeted, or underbudgeted....²

It is easy to understand why many libraries charge for online services. This research study makes no attempt to explore the free or fee issue but only to point-up that an important question is whether or not faculty may be willing to pay for online reference out of their own pocket. This study will disregard the concern that charging a fee can differentiate between the faculty who can afford the service and those who cannot.

Throughout the past several decades the size and computing power of computers has shrunk to the point that small microcomputers have the same capabilities as the first generation of computers. The cost of microcomputers is so inexpensive, relative to the cost of education, that many academic institutions of higher education are requiring students to purchase microcomputers. Others are providing easy and free access to microcomputers throughout the campus.

Advances in telecommunications, telefacsimile reproduction and transmission, and electronic publishing make it easy to envision networking of libraries, publishers, research centers, government agencies, and the like. As early as 1938, H. G. Wells envisioned "a depot where knowledge and ideas are received, sorted, summarized, digested, clarified, and compared."³ While his world brain may not be in "continual correspondence with every university, every research institution, every competent discussion, every survey, every statistical bureau in the world,"⁴ as Wells thought, he is partially correct in his vision.

It is with this background in mind that the researcher conducted a survey of the faculty at Slippery Rock University. This institution is located about fifty miles north of Pittsburgh in Western Pennsylvania. It is a medium sized, public, liberal arts institution of higher education, enrolling about six thousand students.

Slippery Rock University librarians have had faculty status and rank even prior to the collective bargaining agreement of 1971. Librarians have been involved deeply in nearly all campus faculty committees. Librarians have been teaching a one-credit library skills course since 1981.

The library has been part of the OCLC system for cataloging since 1968 and has had an automated circulation system since 1973. The DIALOG online service has been offered to the faculty and students as part of a centralized reference service for over a year prior to the study. The service has been modestly funded and advertised but adequate for the level of research and other work.

The timing for a survey of the faculty seemed right in light of the scenario described above. Do the faculty favor centralization or decentralization of online reference services? Will the services endanger or enhance faculty status for librarians? What is the attitude currently toward faculty status for librarians? If the service is decentralized, will faculty learn how to do searching? Would faculty learn and pay? How often would they use the services? How many own a personal computer? Are any of these variables related to the rank of the faculty member? To whether or not they own a personal computer?

METHODOLOGY

A background information sheet that summarized the state of the art in library automation and online information retrieval was prepared and mailed with a survey form in May 1985. The instruments were mailed to one hundred faculty who were selected at random by the computer from the faculty directory of about 325 faculty. Responses were kept confidential by using a double envelope technique of mailing.

The background sheet was written to be a conservative statement, based on present library and telecommunication technology. This strategy was used to avoid controversy and conjecture. It also seemed advisable because the library's DIALOG service had been inaugurated only recently at Bailey Library and because the library did not use an online catalog. The background sheet and survey form are reproduced in Appendix 1 and 2.

The purpose of the survey and research was to determine the answers to the survey questions and relationships among the variables (questions). Several hypotheses were proposed as a basis for the study. They were as follows:

Hypothesis 1: There is no significant change in faculty attitude toward faculty status for librarians as a result of the faculty members' sex, rank, times using the library, expected online use, and owning a computer.

Hypothesis 2: There is no change in attitude toward centralization of library services as a result of the statement about online services and library automation.

Hypothesis 3: There is no significant correlation between attitude toward centralization or decentralization of library online services and

other factors such as use of the library, faculty status for librarians, and willingness to use librarians for online search help.

These hypotheses were stated in terms of the null hypotheses for research purposes. They do not reflect the author's real expectations. The author expected, for example, that over fifty percent of the faculty would be in favor of faculty status for librarians now and that the technological changes described in the background sheet would enhance that status. The author also expected the faculty to favor decentralization of online services because many faculty seemed to own personal computers or have access to terminals.

ANALYSIS OF THE DATA

The survey results were recorded and analyzed by using SPSS-X, or the Statistical Packages for the Social Sciences.) There were seventy out of a possible one hundred responses for a 70% return rate. The following figure shows the breakdown by sex:

FIGURE 1

Sex of Respondents

52 (74.3%) males

18 (25.7%) females

The sex of the respondents was not significantly related to any other variable or question as expected.

Figure 2 shows the number of respondents at the instructor and assistant, associate and full professor levels.

FIGURE 2

Rank of Respondents

9 (12.9%) instructors
15 (21.4%) assistant professors
21 (30.0%) associate professors
25 (35.7%) full professors

These percentages for rank and sex are generally consistent with overall faculty statistics at Slippery Rock University.

Slightly over fifty percent (52.9%) of the respondents, or 37 faculty members, felt that librarians at the university should have faculty status at this time. 22.9% or 16 faculty were uncertain and the same numbers negative. One person did not answer the question. Comments from three faculty members indicated that they did not understand why this question was asked or relevant. Other comments were that faculty status should be granted only when a librarian teaches at least 50% of the time.

There were two significant correlations with respect to the question should librarians have faculty status now. One significant correlation (17.76 chi square, .0069 significance) was with question four which states that faculty are more likely to use trained librarians for online searching than to pay for the service and training at their own expense. 25 faculty answered yes to both

questions and 9 answered no to both. 6 faculty who were opposed to faculty status for librarians would use librarians rather than learn how to and pay for their own searching. But 8 faculty who favored faculty status for librarians would not use librarians for the service. These 8 may have their own computers and would be willing to learn how to use and pay for the online services on their own. They, presumably, favor decentralization of online reference services.

FIGURE 3
RELATIONSHIP BETWEEN QUESTION 7 AND QUESTION 4

		Q4			
		Yes	No	Uncertain	
Q7	Yes	25	8	4	37 52.9%
	No	6	9	1	16 22.9%
	Uncertain	9	2	5	16 22.9%
	No resp.			1	1 1.4%
		40	19	11	70
		57.1	27.1	15.7	100.0%

Chi Square = 17.759 Significance = 0.0069

The low numbers in all but the yes-yes cell make it statistically unacceptable to draw any deeper conclusion than those who favor faculty status for librarians also tend to seek the librarians reference help.

There was a high, positive correlation between the rank of the faculty respondents and their attitude toward faculty status and rank now (17.966 chi square, .0356 significance.) More full professors (14) and associate professors (9) felt that librarians should have faculty status than not (5 and 3 respectively for full and associate professors respectively.) Again, 52.9% of the faculty were in favor of faculty status for librarians and 22.9% not in favor. As many were uncertain. The rank of the respondents was not highly correlated with any other question or variable.

The question about faculty status for librarians now was highly correlated with the question concerning whether the technological advances described on the background sheet would enhance, endanger, or not change librarians' faculty status. 31 or 44.3% of the 70 faculty who responded to the survey felt that the technological advances would enhance the faculty status of librarians. Of the 31, 24 were in favor of faculty status for librarians at the present time, five were uncertain, and only 2 were not in favor of faculty status for librarians. Only 4 individuals were of the opinion that the librarians' faculty status would be endangered. 14 were uncertain as to the effect but 3 were in favor and 4 against faculty status for librarians now. 6 were uncertain on both questions. One person did not respond, the rest (21) felt there would be no change and, of them, 8 were in favor and 8 against faculty status for librarians now.

FIGURE 4

WILL ATTITUDE TOWARD FACULTY STATUS CHANGE AS A RESULT?

	No change				#	%
	Enhanced	Endangered		Uncertain		
Yes	24	2	8	2	37	52.9%
No	2	2	8	4	16	22.9%
Uncertain	5		5	6	16	22.9%
No response				1	1	1.4%
#	31	4	21	14	70	
%	44.3%	5.7%	30.0%	20.0%	100.0%	

22.286 chi square 0.008 significance

No change in status was viewed as positive because librarians at Slippery Rock University now have faculty status and rank. The cumulative total of faculty respondents who answered that online services and library automation would either enhance or not change faculty status for librarians was 74.3%. This was a higher percentage than expected but may be explained, in part, by the active involvement over the decades of the library faculty on faculty committees at the university level. Librarians at the institution have been a strong voice in the faculty union and bargaining unit and have chaired many of the key faculty committees, including promotions, tenure and sabbatical, and negotiations. Librarians should take solace in the fact that few faculty believe the described technological advances would adversely affect faculty status.

While faculty respondents were in favor of faculty status for librarians and willing to use librarians for online search services rather than learn how to use and pay for the services on their own in order to have direct and convenient access, the faculty favored decentralization. Their response clearly shows the desire to have control over the services but, without the control, they want the services anyway. The faculty respondents wanted their cake and to eat it too. 47.1% of the respondents favored decentralization on question two. 28.6% did not favor decentralization and 24.3% were uncertain.

These responses contrast with the answers to the first question about centralization of online literature searching. 41.4% (29) answered yes to question one in favor of centralization. They believed that computer literature searches should be done by trained librarians as part of a library/university budgeted service. 28.6% (20) answered no to question one and 30% (21) were uncertain. Figures 5 and 6 show the frequency distributions for faculty in favor of centralization and decentralization, respectively.

FIGURE 5

FACULTY RESPONDENTS AND CENTRALIZATION ISSUE:

	#	%
In favor	29	41.4
Against	20	28.6
Uncertain	21	30.0

FIGURE 6

FACULTY RESPONDENTS AND DECENTRALIZATION ISSUE:

	#	%
In favor	33	47.1
Against	20	28.6
Uncertain	17	24.3

It is interesting to note that 28.6% (20 respondents) answered that they were against both centralization and decentralization of the services for online literature searching. About all that can be concluded is that the faculty slightly favor decentralization. The question concerning decentralization, question two, and willingness to learn how to use and pay for computer search services was significantly, positively related (12.26 chi square, 0.015 significance.)

Figure 7 shows the relationship between question two and three.

FIGURE 7

	Q3			
	Yes	No	Uncertain	
Q2				
Yes	13	11	9	33 47.1%
No	2	16	2	20 28.6%
Uncertain	6	6	5	17 24.3%
#	21	33	16	70
%	30.0%	47.1%	22.9%	100.0%

Chi square = 12.26 Significance = 0.015

13 of the faculty respondents answered yes to both questions. That is, they favored decentralization and were willing to learn how to use and pay for the services at their own expense in order to have direct and convenient access. These are the faculty who will "put their money where their mouth is," to use a hackneyed phrase. 16 answered no to both questions and were against decentralization, supposedly because they were not willing to learn how to use and pay for the services at their own expense. These may be faculty that best realize the value of the librarians' knowledge and experience. These two contrasting sets of responses account for the high correlation. The researcher expected that those faculty respondents who owned a computer would also favor decentralization. But the results did not bear-out this expectation. Instead, the response was almost evenly split.

Another strong correlation was between those faculty who said they owned a computer and those who said they expected to use the search services, or between questions 11 and five. Figure 8 presents the data. 37.1% (26) of the 70 respondents said they owned a computer. None of the computer owners admitted that they would NOT use the library services for online searching.

FIGURE 8

RELATIONSHIP BETWEEN OWNING COMPUTER & USING SERVICES

		Times will use search services					
Own Computer		0	1-2x	3-4x	5+		
Yes			14	10	2	26	37.1%
No		3	21	15	4	43	61.4%
Uncertain		1				1	1.4%
		4	35	25	6	70	
		5.7%	50.0%	35.7%	8.6%	100.0%	

Chi square = 18.31 Significance = 0.005

All of the faculty respondents who owned computers, that is, expected to use the services at least once each semester. Even most of the non-computer owners, however, (all but three) expected to use the computer search services at least once. 40 of the 43 faculty who did not now own a computer, therefore, expected to use the search services. Non-computer owners would naturally use centralized library reference services and trained online service searchers. Further analysis of the data showed that 20 faculty who did not own computers favored centralization of online reference as opposed to 12 faculty who did not favor centralization. But there was no correlation (significance) between the question on centralization (#1) and owning a computer.

It may also be interesting to discuss some unmet expectations and findings that showed no statistically significant correlations (chi square). Some of this may be the result of a small sample. A three institution survey has been conducted and those findings will be analyzed and described in a future publication. The sample size of the broader study will be over three hundred faculty from nearby institutions of higher education. A small sample size meant that some cells in a three by four table, for example, had few or no responses.

Although there was no statistically significant correlation (chi square) between questions eight and seven, a high number of respondents (32) not only used the library three or more times a semester but also favored faculty status for librarians. There was a similar and non-statistically significant relationship between the same question (#7) on faculty status for librarians and the times expected to use search services, question #5. Remember that the relationship between questions 7 (faculty status for librarians now) and 4 (use of librarians to do online searching) was statistically significant. Questions 7 and 6 were also highly correlated (chi square = 22.28, significance = 0.008). Those who favored faculty status for librarians now also thought that online services would enhance faculty status and rank for librarians.

It is possible that it is too early, given the faculty's limited experience with online search services, library automation, and use of personal computers, to establish any correlation with the variables under study. Most faculty whom the author knows, for example, do not use their home computer for online searching of bibliographic data bases. Rather, the use is limited to word processing, spreadsheets, games, etc. DIALOG, BRS and other services are just beginning to market home online search services and to provide training workshops for non-librarians. After additional marketing of these services and more widespread purchasing of personal computers, the relationship between owning computers for home use, the type of use individuals make of personal computers, and the variables discussed in this study need to be examined in more detail. Will faculty who do extensive literature searching, for example, find it more convenient and more appropriate to do their literature searches using their own personal computers? Will the number of faculty who are willing to purchase the necessary computer hardware make a difference on library use of online services? At most non-research oriented colleges and universities, the author suspects that few faculty will be willing to underwrite all of the expenses involved. Only if institutions of higher education are willing to provide departments with computers and budgets for online searching will the library be impacted the author believes.

There were a variety of written responses, mostly positive in nature, by the faculty. The faculty status for librarians question generated the most comments. Only two written comments were somewhat negative and suggested that unless librarians teach, presumably in the classroom, they should not have faculty status. One faculty member wrote: "Hopefully, librarians are not reduced to simple computer operators as a result of more automation." Another comment went on to suggest that librarians should lead the way into the twenty-first century:

I thought librarians did have faculty status....I'm convinced that the library should enter the 21st century even if the rest of SRU is muddling along in the 15th. I'm not sure how many people would use such search services. If you people are prepared, perhaps the rest will slowly follow.

But other faculty were apprehensive. A long, typed letter accompanied one response. This discourse on "down time," the wider dissemination of information as a result of the discovery of the printing press and the faculty member's own experience with editing newspapers with video display terminals, ended by raising several important questions. Will everyone be computer literate and be able to afford the systems? Who will control the systems? Will they be worth the costs? He concluded that online catalogs may not be dependable and that we may be limiting access to information.

The attitude of many faculty toward decentralization was expressed by one faculty member rather succinctly on a separate page. He said "Decentralize the search services for training but centralize the budgetary aspect....The librarians' role will become that of the "expert" who assists others." This same individual said online services would enhance faculty status for librarians "so long as they become retrained and proficient in the "ins and outs" of the new system." Another faculty member "loved" the idea of computer searching and the time it would save but added "this is all quite depressing on one level. I'm very print oriented and I do love libraries as tangible, living evidence of compiled knowledge and ideas."

Generally, then, the survey was well received by the Slippery Rock faculty as evidenced by their positive and encouraging remarks. One such remark was "Your movement to accelerate the speed at which we arrive at that destination can only benefit the institution." The faculty would support online services. And although they would prefer decentralization, they would support centralized, library online information retrieval services. There is an impression left from their comments that they expect librarians to push in that direction. And faculty have a very high, positive regard for academic librarians as evidenced by their favoring of faculty status for librarians.

NOTES

1 "New Expectations from Users of Academic Libraries,"
in New Dimensions for Higher Education: Priorities for
Academic Libraries (San Francisco: Jossey-Bass, 1982),
p .

2 "Academic Libraries, Online Searching, and Turf:
A Symposium," The Journal of Academic Librarianship,
2, No. 5 (1985), 268.

3 World Brain (New York: Doubleday, 1938), p. 69.

4
ibid.

APPENDIX 1

Background Sheet

To:

From:

Richard Wood, Ph. D.
Bailey Library

Re: Participation in a research study

Date: April 15, 1985

Your name was selected at random to participate in a research study about how faculty believe technological advances will affect libraries, librarians, and themselves in the 21st century. Your help will be appreciated and is essential to the success of my research. Please read the background information below and answer the questions on the next page.

First, the trend toward replacing card catalogs with online, automated library systems will continue and result in faster, more effective searching of library holdings. Individual library systems, in many cases, will be interconnected, resulting in the capability to determine library holdings in the region, nation, and other countries. Our library has been part of a system such as this for cataloging and interlibrary loan since the early 1970's. Besides traditional author/title/subject searching, however, future systems will allow users to limit results by language, copyright date, and other subtopics. Faculty and students will be able to access library systems from home computers and terminals located throughout campus.

Second, computer retrieval systems, such as Lockheed who has offered the DIALOG searching system for many years, will continue to expand the number of periodical and other data bases indexed. Companies should enhance their online help features for self-learning and offer more local training workshops so that faculty, researchers, and others will be able to do literature searches from their homes and offices more cost effectively. Photocopies or micrographic reproductions of articles that are needed by people using the systems will continue to be offered, but at lower costs as the demand for the service increases. Advances in telefacsimile reproduction and transmission of material will further limit the need for libraries to subscribe to periodicals used infrequently. A similar technology having the same effect is electronic publishing whereby publishers receive, review, edit, and publish articles or studies using computer technology. This technology does away with printed copies of articles from inception by the authors to the printing-off of copies on demand by publishers.

Finally, reference sources such as encyclopedias, dictionaries, almanacs, and bibliographies will be offered by retrieval companies for online, computer searching by anyone with the proper computer hardware. With such hardware, in fact, anyone with the financial resources to pay for the services will be able to do literature searching without visiting the library. The degree, level, or cost of any of these services, however, cannot be predicted accurately. Nor can the effect on libraries, librarians, and users of information be predicted. But you can help by answering the questions on the next page.

APPENDIX 2

Survey Form

Please answer the following questions after you have read the background information on the attached sheet. Your response will be kept confidential by returning and sealing these sheets in the envelope provided.

1. Do you believe that computer literature searching should be done by trained librarians and budgeted by the university for faculty, only as part of a centralized library service? / / Yes
/ / No
/ / Uncertain
2. Do you believe it would be better to decentralize computer search services in a way that faculty would have direct access and a budget for search services? / / Yes
/ / No
/ / Uncertain
3. Are YOU willing to learn how to use and pay for computer search services and training workshops, say at an average cost of \$30 per search, in order to have more direct and convenient access from a home or office computer system? / / Yes
/ / No
/ / Uncertain.
4. Are you more likely to ask trained reference librarians to do computer literature searching than to learn how to do so yourself at your own expense? / / Yes
/ / No
/ / Uncertain
5. How often would you be likely to use computer search services for course work and research during a semester? / / Not at all
/ / 1 or 2 times
/ / 3 or 4 times
/ / 5 or more
6. Do you believe that librarians' faculty status and rank will be enhanced, endangered, or not changed by the technological advances described? / / Enhanced
/ / Endangered
/ / Not changed
/ / Uncertain
7. Do you believe that librarians should have faculty status and rank now? / / Yes
/ / No
/ / Uncertain
8. The number of times you used Bailey Library this semester? / / Not at all
/ / 1 or 2 times
/ / 3 to 6 times
/ / More than 6 times
9. Your sex: / / Male / / Female
10. Your rank: / / Instructor / / Associate professor
/ / Assistant professor / / Full professor
11. Do you own a home computer? / / Yes
/ / No
12. If not, do you contemplate buying one over the next few years? / / Yes
/ / No

PLEASE ADD ANY COMMENTS THAT YOU WISH TO HERE OR ON THE BACK OF THE SHEET:

THANK YOU FOR YOUR HELP. PLEASE SEAL THESE SHEETS IN THE ADDRESSED ENVELOPE AND RETURN THEM TO ME, RICHARD WOOD, AT BAILEY LIBRARY.