
Ten Years Later: Support Staff Perceptions and Opinions on Technology in the Workplace

DOROTHY E. JONES

ABSTRACT

A SURVEY CONCERNING UNIVERSITY-LIBRARY support-staff perceptions and opinions about technological change was conducted early in 1998. The results are compared to the results of a similar survey administered to the same population in 1988. The evolving perceptions, opinions, and suggestions of this educated and highly experienced group of library personnel are offered as a resource for better planning of library automation and for the improvement of the library as workplace.

INTRODUCTION

Support staff, librarians, and administrators working together amicably, even enthusiastically, toward cooperatively created goals emanating from a cooperatively written vision statement, could quite possibly find solutions to some of the major challenges now facing libraries, many of which are related to technological change. Changes in the kinds of tools we use at work and the kinds of resources we have available are catalysts for new philosophies, new concepts of service, new designs for our workday, and new feelings—positive and negative—about our work. Change in the magnitude we are now experiencing is almost sure to cause turbulence. Collegial understanding among all of the members of a library staff, if carefully fostered, can certainly minimize trouble and maximize the many strengths available to make technological transitions smoother.

A questionnaire distributed in 1988 was designed to study the perceptions of library support staff concerning new technologies that were

Dorothy E. Jones, Reference Department, Northern Illinois University Libraries, DeKalb, IL 60115

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beginning to affect libraries and the way library work was done. The study was published as an article in *Library Trends* (Jones, 1989). Ten years later, it is appropriate to gather again the opinions of support staff on issues of technology in order to see which changes in work situations and attitudes have occurred over the past ten years. Only in understanding what happens in the workplace and how people are reacting to changes can we find ways to create a better work environment for library employees. It is the belief of this author that library employees who feel they are heard and valued will make exceptional contributions to the institution in which they work—in times of stress as well as in ordinary times.

DESCRIPTION OF THE RESEARCH

The raw material for this article was gathered by means of a questionnaire distributed to the support staff of three university libraries. The questions are not discussed in this article in the same order as they appeared in the questionnaire but are designated by their questionnaire numbers. The reader may refer to the questionnaire itself, which is included in the appendix at the end of this article. Most of the questions are the same as those asked in the survey which was sent to the same population in 1988. There are some minor wording changes in this 1998 survey to reflect the passage of time and to improve clarity. There are also ten new questions added to the 1998 survey (numbers 4, 7, 14, 15, 23, 24, 25, 26, 31, and 32). These were included in response to areas of concern that have emerged during the past ten years. Question 29, while basically the same as a question asked in the 1988 survey, now includes the category of "student help." Some libraries are using more student help in place of diminishing numbers of full-time employees.

The questionnaire was distributed to the support staff of the same three academic libraries surveyed in 1988—the libraries of the University of California at Santa Barbara; Northern Illinois University in DeKalb; and the University of Richmond in Richmond, Virginia. One library is located on the west coast, one in the Midwest, and one on the east coast. Two of the libraries are part of state university systems, and one (the University of Richmond) is a private university. Their sizes range from approximately 3,800 students to 23,000 students. For the current 1998 survey, 218 questionnaires were distributed, with 118 individuals (54 percent) responding. In 1988, 267 questionnaires were distributed, with 133 individuals (50 percent) responding. Averaging the number of staff in the three universities, there is 18 percent less support staff in 1998 than there were in 1988. The response rate is 4 percent greater in 1998 than in 1988 but, because of the decrease in numbers of support staff employed at all three universities, the actual numbers of responses are smaller. Percentages or, in fact, any statistics mentioned in this article for specific or separate libraries will be given in random order so that no particular numbers

of responses can be associated with a particular library. The results of the questionnaire, for the most part, will be presented without drawing conclusions.

Discussion of possible reasons for statistical changes between the 1988 and 1998 results are only conjectural. The results of the survey have been calculated in the same way in 1998 that they were in 1988 so that comparisons can be made easily. However, some additional perspectives on the raw numerical results are included in this 1998 article, resulting in additional charts and figures not included in the 1988 article.

It is the opinion of this author that statistics are almost always open to several interpretations and are seldom either absolute or determinative but are often very helpful as indicators. There are always unseen and unknown factors present within the general populations surveyed, and each individual answering the survey questions will have included non-measurable and uncalculated interpretations of the questions in his or her responses.

DESCRIPTION OF THE SURVEY INSTRUMENT

The current survey consists of thirty-four multiple choice questions, some of which require only one answer, and some of which allow the respondent to check more than one answer if more than one applies—e.g., questions 5 and 29. The thirty-four questions concerning technology in the workplace are followed by one page of questions concerning the respondent's personal background in terms of education (kind and amount) and library experience (kind and length).

Respondents were encouraged to write comments in the margins as they answered the questions. A special place for comments was also included after question 34. All respondents were promised, both in the cover letter which accompanied each questionnaire and at the end of the questionnaire itself: "Individuals who answer the questionnaire will remain anonymous. Results will in no way be presented or tabulated to reflect negatively on a particular library."

RESULTS OF THE SURVEY

Educational Background of Support Staff

As in 1988, the educational level of support staff is high (see Figure 1). In 1998, 78 percent have an undergraduate or graduate-level degree. Almost all respondents indicated that they had participated in miscellaneous training programs or courses. Forty-four respondents took post-high school course work which did not result in a degree. These courses covered a wide range of subjects including computing, art, music, English literature, language study, education, management, library science, social work, psychology, and others. Almost all respondents had participated in some form of technology training in their libraries.

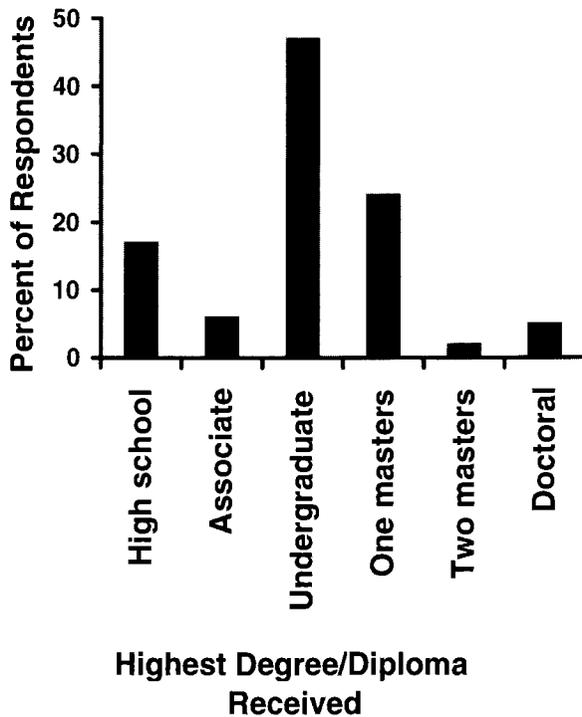


Figure 1. Educational Background of Respondents. 109 Respondents Answered this Question, 9 did not.

The major and minor subjects studied for college/university degrees earned by support staff are concentrated in the humanities, followed by the social sciences, and a small number of science/math/technology emphases. Boundaries separating disciplines are not precise, and several people listed double majors or minors. However, a “straw count” of majors, minors, and graduate-study disciplines of respondents shows about seventy humanities, fifty-five social science, and nineteen science emphases. Included in the fifty-five social science emphases are ten people with an educational emphasis in library science.

Library Work-Experience

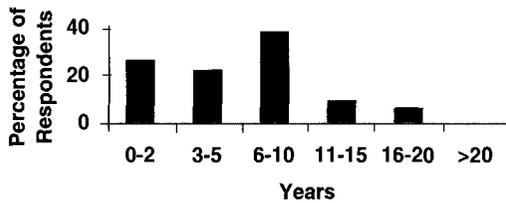
There was a noticeable difference between the percentages of respondents in 1988 and in 1998 who omitted answers to the “Personal Background” questions. In 1988, 6 percent of respondents omitted answers to the questions on the amount of their library employment experience—in 1998, 16 percent omitted these. In 1998, 17 percent did not identify their job titles or departments.

Of all the respondents who answered the questions concerning length of library service, 98 percent have had more than three years' experience working in libraries, 90 percent have had more than three years experience in the library in which they are now employed, and 75 percent have had more than three years experience in their present position. These rates are higher than the rates of experience in 1988. In both surveys, 1988 and 1998, the high rates of experience follow a similar pattern in each of the libraries surveyed (see Table 1 and Figures 2 and 3).

TABLE 1.
EXPERIENCE OF THREE COLLEGE LIBRARIES' STAFF

Percentage of Staff	Library A		Library B		Library C	
	1988	1998	1988	1998	1988	1998
—with more than 3 years experience in library work	74	96	82	97	85	96
—with more than 3 years experience at present library	67	93	69	94	70	85

2a. Present position



2b. At this library

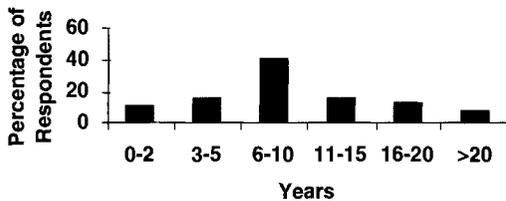


Figure 2. Years of Library Work Experience in 2a) Current Position and 2b) at their Current Library. Percentages Based on 99 Respondents Answering this Question.

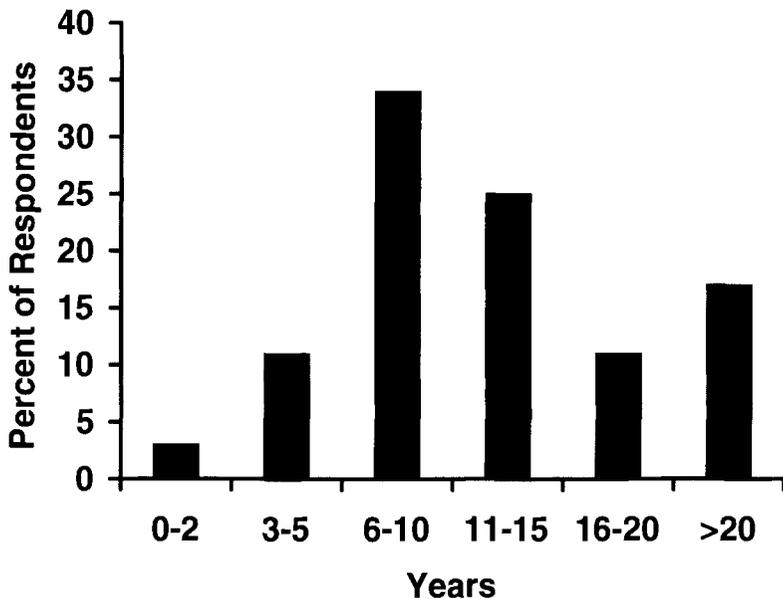


Figure 3. Number of Years of Total Library Work Experience. Percentages Based on 99 Respondents Answering this Question.

Personal Reactions to Working with New Technologies

In question 5, respondents were given a choice of nine words to describe their feelings about working with computers (see Figure 4). When this question was asked in 1988, about 41 percent of the respondents had been working in libraries long enough to experience both the virtual absence of high-tech library automation and also the surging expansion of technology throughout their libraries. There was a very positive attitude overall toward learning and using the new technologies. The current 1998 survey results show about 87 percent of the current respondents have had six or more years of library work experience, and about 53 percent have had eleven or more years of library work experience. Technology is not "new" to very many of our support staff. Most have now experienced a high-tech work environment for a long time. However, for all of them, new technology in very large doses has been added to what was already present in their work world ten years ago or when they began library employment. Has this high-speed technological expansion made them feel better or worse about their work life?

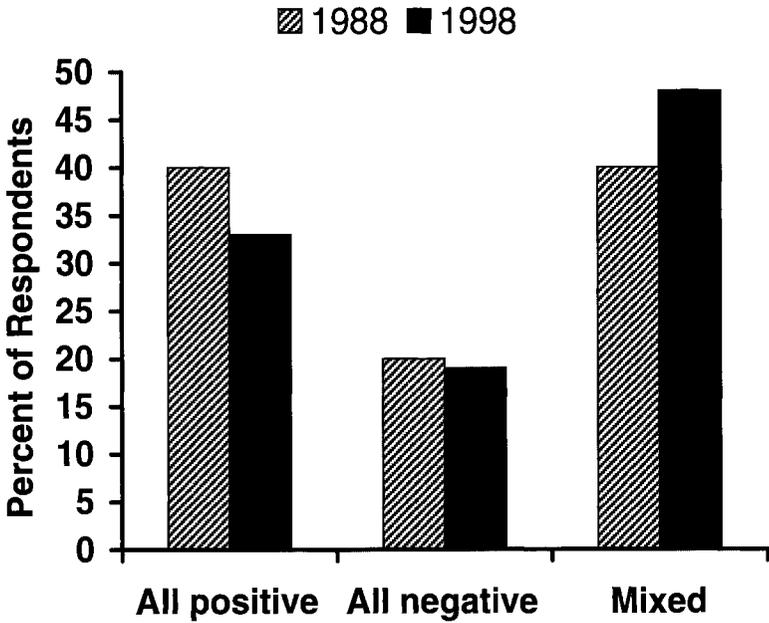


Figure 4. Feelings About Working with Computers (Question 5).

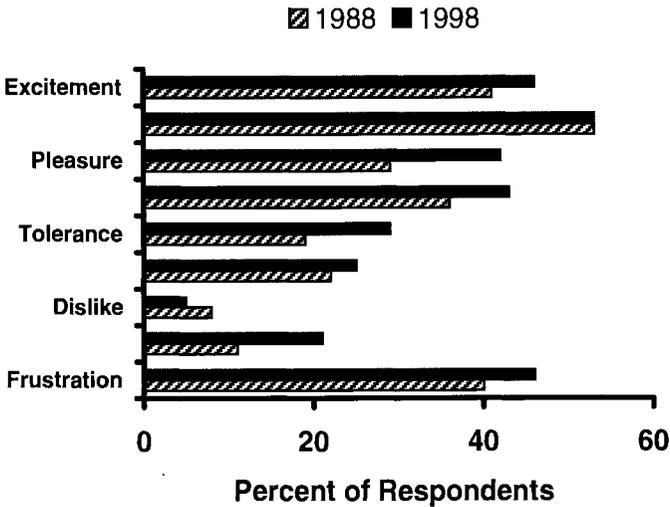


Figure 5. Personal Feelings or Reactions Concerning Working with Computers. Respondents Could Check Any That Applied. Results from 1998 Survey are Compared to those from 1988.

In the current survey, thirty-nine people checked *only* positive terms (excitement, enjoyment, pleasure, competency) (see Figure 5). Twenty-two respondents checked *only* negative terms (frustration, inadequacy, dislike, irritation, tolerance). Fifty-seven respondents checked a mixture of positives and negatives. In each of the three universities the order was, from highest to lowest: mixed answers, positive answers, negative answers. Figure 4 shows the composite positive-negative ratios between the 1988 and the 1998 answers. In the current survey, the all-positive responses show a decrease of 7 percent, while mixed positive-negative reactions have increased by 8 percent. In 1988, all-positive responses and mixed-responses were equal at 40 percent of respondents. The all-negative responses have remained pretty stable, decreasing in 1998 by 1 percent.

Some discussion about the answer choices might be helpful. "Enjoyment" and "excitement" were the two most-checked positive choices, in that order, in both 1998 and 1988. "Frustration" ranked highest among the negative words in both 1998 and 1988, followed by "tolerance" and "irritation." In both surveys, "tolerance" was counted among the "negatives," as indicating a passive or "necessary pain" skepticism. In the current survey, ten people checked only "tolerance," which by itself is not a wholly negative term. Five in the "mixed term" category had checked "tolerance" as their *only* negative term, all others being positive. On the other hand, the term "competency," considered as a "positive" term in this survey, is an emotionally passive word which could indicate a positive sense of work accomplishment but a neutral-to-negative attitude or feeling toward the technology in general. Seven people checked only the word "competency." While the inclusion of these terms does not change the overall picture, it softens the edges a bit between positive and negative reactions.

Question 6 asks in a slightly different way about feelings or reactions to working with changing technologies. Table 2 shows the answers in highest-to-lowest-choice order.

The numerical ranking order was the same in each of the three universities surveyed. It also was the same in 1988 as in 1998 except for the 1998 insertion of the new answer-option: "I feel irritated because I don't

TABLE 2.
QUESTION 6. WHEN I NEED TO LEARN A NEW TECHNOLOGY I . . .

<i>Response Choices</i>	<i>Number of Responses</i>
Look forward to learning it	60
Want to learn it, but feel uneasy	41
Feel irritated because I don't have time	21
Have no particular reaction	11
Dread learning it	3

have time.” This answer option received a fairly strong response in each library. The option was added because of oft-heard comments such as: “If only we’d gotten this [new] system before the students arrived so we could learn it properly.” or “I’ve got *another* meeting to learn [new process or database] and I just can’t get my regular work done.” Some negative reaction to technology and to change seems to have more to do with increasing workload than with the changing technology itself. Out of the twenty-one times when “feel irritated because I don’t have time” was checked, three people had checked it as their only choice, and the other eighteen had checked it in combination with only positive answer choices.

Staff and the Internet

The question about the use of the Internet, which was not part of our work-world in 1988 is, of course, new to the 1998 survey (see Table 3). While more than half of the support staff use Internet resources infrequently, 87 percent do use them to one degree or another.

TABLE 3.
QUESTION 15. I USE INTERNET RESOURCES IN MY WORK. . .

<i>Question Choices</i>	<i>Number of Respondents</i>	<i>Percentage of Respondents</i>
A lot	37	31
A little	66	56
Not at all	13	11
No answer	2	2

Staff Training for Use of New Technologies

The need for training in the new technologies and, just as important, time to absorb and practice after training sessions appears repeatedly in the comments as well as the question-responses in the survey (see Table 4). It is also emphasized in the literature on library personnel issues and employee health.

There has not been a major change in staff perception of the quality of the training received for new technologies. In the current questionnaire, 65 percent say the training they receive is moderately good to excellent. This is a little higher than the approximate 61 percent positive responses made in 1988. The positive-negative balance in 1998 looks like this—positive (excellent, very good, moderately good), seventy-seven responses; negative (not very good, poor, nonexistent), thirty-three responses. The ratios of positive to negative responses were very different in each library. The ratios, positive to negative, were roughly 9 to 1, 2 to 1, and 1 to 1. The number of respondents who chose not to answer this particular question rose from 4 percent in 1988 to 7 percent in 1998.

Question 13 (see Table 5) invites respondents to broaden their thinking about technological training beyond their own personal training

TABLE 4.

QUESTION 11. THE TRAINING I HAVE RECEIVED IN NEW TECHNOLOGIES WITH WHICH I WORK HAS BEEN. . .

<i>Response Choices</i>	<i>Number of Responses</i>
Excellent	5
Very good	28
Moderately good	44
Not very good	17
Poor	8
Nonexistent	8
No answer	8

TABLE 5.

QUESTION 13. THE QUALITY OF MY LIBRARY'S TECHNOLOGY-TRAINING PROGRAM FOR SUPPORT-STAFF IS. . .

<i>Response Choices</i>	<i>Number of Responses</i>
Excellent	15
Adequate	68
Inadequate	33
No answer	2

experience and to include librarywide training efforts and all departments. It is assumed that the respondents' answers reflect their own observations and conversations with colleagues. There were only two people who chose not to respond, as compared with twenty-two people in 1988 who either checked "no opinion" or did not answer this question.

The positive answers in 1998 far outweigh the negative—eighty-three to thirty-three—while the negative answers (sixty-one) outnumbered the positive (fifty-two) in 1988. The positive answers to question 13 ranked higher than the negative in all three university libraries.

There are many comments in the current survey that emphasize (1) the need for more time to absorb and practice the new information and techniques taught, and (2) the need for more time between staff training and presentation of new technologies to the library user population. Credit must certainly be given to libraries that expand or reconfigure facilities and personnel to improve the quality of training and to libraries that plan well enough to place training in a time frame that fosters confidence and comfort among library staff. Budget and the quick-change ambience in which we live make well-planned and timely training a challenge. One respondent wrote: "My biggest complaint is the sink or swim attitude toward staff training." Another person commented: "There is still a lot of information that is self-taught and passed along by word of mouth between staff." Staff satisfaction has improved over the last ten

years, but a rating of “excellent” for training in technology still eludes us and is definitely something to strive for.

Current staff preferences among various types of technology education have shifted somewhat from the preferences of 1988 (see Table 6).

TABLE 6.
QUESTION 12. I PREFER TO LEARN NEW TECHNOLOGIES. . .

<i>Response Choices</i>	<i>Number of Responses</i>
In a structured class	39
In a workshop	46
From my supervisor	23
On my own with a manual	35
From a friend	30
Not at all	1
No answer	1

Learning “in a workshop” got the highest number of favorable responses as it did in 1988. However, “in a structured class” and “on my own with a manual” were the second and third response choices in 1998. Though workshop learning was the composite favorite, each of the three libraries rated a different learning method as number one: “in a workshop,” “on my own,” and “in a structured class.” Several respondents crossed out “with a manual,” leaving their answer as “on my own.” Learning “from my supervisor” slipped from second-place preference in 1988 to fifth-place in 1998. Table 7 shows the 1998 and 1988 learning choices ranked from highest to lowest:

TABLE 7.
LEARNING CHOICES

<i>1988</i>	<i>1998</i>
Workshop	Workshop
From my supervisor	Structured class
On my own	On my own
Structured class	From a friend
From a friend	From my supervisor
Not at all	Not at all

Are employees simply getting most accustomed to the workshop approach, which is an approach adopted by many technology corporations and vendors? Are supervisors victims of technological or work overload so that they or their staff are less confident about their expertise? Is there a growing separation between the technical experts and the majority of staff?

There are a number of speculations to be explored, and some exploration might help libraries improve their approach to training. Perhaps more consultation with individual support staff members and/or with the library support-staff organization in each library would result in the kind of training tailor-made for best results in the particular situation. As in the 1988 survey, the current survey indicated that quite a few respondents (56 out of 118) liked more than one type of training.

Responses to question 9 (see Table 8) reveal a sizable change between the 1988 and the 1998 perceptions concerning what is demanded or expected relative to staff learning.

TABLE 8.

QUESTION 9. DO YOU FEEL THAT LIBRARY EMPLOYEES ARE EXPECTED TO LEARN TOO MANY NEW THINGS TOO FAST?

<i>Response Choices</i>	<i>Percentage of Responses 1988</i>	<i>Percentage of Responses 1998</i>
No	53	48
Yes	24	37
No opinion	20	10
No answer	3	5

While the largest number of respondents then and now said the need-to-learn pace was not too fast, the difference between the percentage of "no" and "yes" answers has diminished from a 29 percent difference to an 11 percent difference. A higher percentage thinks the staff does have to learn too much too fast. The "no opinion" or "no answer" percentages combined have decreased from 23 percent to 15 percent, so a larger segment of respondents registered opinions. At the same time, according to the responses to question 10, which will be shown later in this report, 75 percent of today's respondents feel the pace at which new technology is introduced into their departments is either too slow or very acceptable. Do the answers to questions 9 and 10 conflict with each other or show indecision, or do they simply reveal a willingness to accept the inevitable flow of changes if given more time to prepare and to learn?

Question 14 (see Table 9) regarding technical support is a new question in the 1998 survey and is appropriately included at this point because adequate assistance and availability of trouble-shooting technical experts are part of the learning process. Good technical support certainly raises employee comfort level during intensive change. While "moderately good" was checked the most in two libraries, "very good" was checked most often in one of the libraries.

Performance, Workload, and Reward

The impact of technology on work performance and on workload is

TABLE 9.
QUESTION 14. IN MY LIBRARY, WHEN WE HAVE DIFFICULTIES,
TECHNICAL SUPPORT IS. . .

<i>Response Choices</i>	<i>Number of Responses</i>
Excellent	12
Very good	38
Moderately good	46
Not very good	14
Poor	5
Nonexistent	2
No answer	1

difficult to isolate and measure with so many other kinds of changes swirling about us—changes in economics, authority lines, and personnel policies. However, staff *perceptions* of the impact of technology on their jobs, while not the result of scientifically isolated cause-effect experiments, are important and worthy of serious consideration by administrators, supervisors, and personnel managers. The following question was added to the 1998 survey: “Technology allows me. . .” The responses are indicated in Table 10.

TABLE 10.
QUESTION 7. TECHNOLOGY ALLOWS ME. . .

<i>Response Choices</i>	<i>Number of Responses</i>	<i>Percentage of Responses</i>
More control over my workday	39	33
Less control over my workday	20	17
Neither more nor less control	58	49
No answer	1	1

A number of respondents commented that the reason technology has diminished their control over their workday is simply because there are not enough computer workstations. They have to adapt their schedule to computer availability.

Questions 1, 2, and 3 ask how technology affects the ease, speed, and accuracy of work. The responses to these questions for both the 1998 and 1988 surveys are shown in Figure 6.

In each case, the most positive answer was checked most often. However, the perception that technology always makes work easier, faster, or more accurate seems to have diminished between 1988 and 1998. The percentage of respondents who feel that technology makes their work harder has increased from 9 percent to 24 percent during the last ten

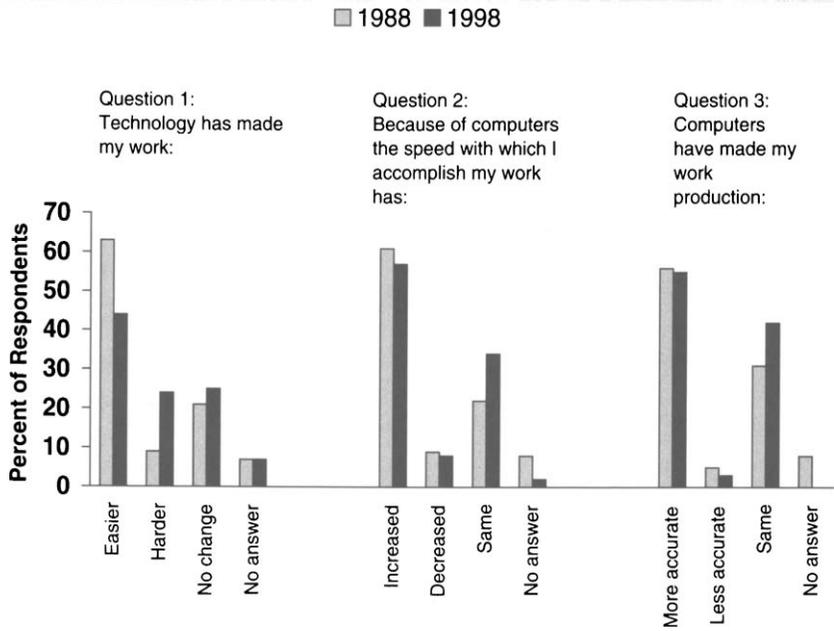


Figure 6. Effect of Technology on Performance of Tasks. 2-6 Percent of Respondents Did Not Answer Each Question.

years. There is a strong variance among the libraries. Notice in Table 11, for 1998, that in two of the three libraries, more people chose "harder" than "no change." In 1988, the "harder" answer was lowest at all three libraries.

TABLE 11.
QUESTION 1. AS THE DEVELOPMENT OF TECHNOLOGY PROGRESSES,
MY WORK GETS. . .

<i>Institution</i>	<i>Easier</i>	<i>Harder</i>	<i>No Change</i>
Library A	42%	21%	33%
Library B	38%	30%	25%
Library C	68%	18%	9%

In 1998, as in 1988, the number of neutral responses to questions 1, 2, and 3 suggests that a sizable number of staff members feel that technology has not made a great deal of difference in the ease, speed, or accuracy of their work. The neutral answers are more numerous in 1998 than in 1988 (see Table 12).

TABLE 12.
NEUTRAL RESPONSES TO QUESTIONS 1, 2, AND 3

<i>Response Choices</i>	<i>Percentage of Respondents 1988</i>	<i>Percentage of Respondents 1998</i>
No change in ease or difficulty of work	21	29
No change in speed of work accomplishment	22	34
No change in work accuracy	31	42

While only 55 percent of current respondents feel that computers have made their own work more accurate, 63 percent of respondents feel technology has improved the accuracy of the records kept in their libraries (see Table 13).

TABLE 13.
QUESTION 18. DO YOU FEEL THAT, OVERALL, TECHNOLOGY HAS IMPROVED THE ACCURACY OF THE RECORDS KEPT IN THE LIBRARY?

<i>Response Choices</i>	<i>Number of Responses</i>	<i>Percentages of Total Responses</i>
Yes	74	63
No	22	19
No opinion	20	17
No answer	2	1

Comments written by respondents reflect some reasons why the proliferation of new technology makes work more difficult for some staff. Here are a few of the comments:

- “My speed increases, but the amount of work also increases.”
- “More can be done so more is expected.”
- “[Work is] more complicated, not necessarily harder.”
- “It’s harder to train staff.”
- “My speed decreases while [I’m] learning.”

The written comments also reinforce evidence of growing concerns about workload and added responsibilities. Question 4 is a new question in the current 1998 survey (see Table 14).

TABLE 14.
QUESTION 4. AS TECHNOLOGY EXPANDS, MY WORKLOAD. . .

<i>Response Choices</i>	<i>Number of Responses</i>	<i>Percentage of Responses</i>
Decreases	6	5
Increases	60	51
Stays about the same	52	44

More than half of the total respondents replied that technology increased their workload and, of the remainder, only 5 percent experienced any decrease in workload. In the three separate libraries, 42 percent, 50 percent, and 58 percent of the support staff believed that technology increased their workload.

The percentages of staff in each library who believe technology has added more *responsibilities* to their job are even higher: 58 percent, 64 percent, and 62 percent. The composite response to the question about responsibilities is in Table 15.

TABLE 15.
QUESTION 21. TECHNOLOGICAL ADVANCES HAVE. . .

<i>Response Choices</i>	<i>Number of Responses</i>	<i>Percentage of Responses</i>
Added more responsibilities to my job	72	61
Diminished the responsibilities of my job	4	3
Had no effect on the amount of responsibility I carry	42	36

In 1988, 55 percent of the respondents indicated that technological advances increased their responsibilities. In both the 1998 and the 1988 surveys, the introduction and assimilation of technology into the work pattern seems to have increased workload and responsibility. The perceived rewards for additional responsibility are not much better in 1998 than in 1988 (see Table 16).

TABLE 16.
QUESTION 22. WHEN ADDITIONAL RESPONSIBILITY IS ASSIGNED AT THE LIBRARY IT IS REFLECTED IN THE. . . (CHECK ANY THAT APPLY):

<i>Response Choices</i>	1988	1998
	<i>Percentage of Responses</i>	<i>Percentage of Responses</i>
Pay check	0	2
Job description	17	39
Respect shown to individual	6	8
None of the above	47	48
No answer	30	3

While the largest numbers of respondents still do not receive any of the listed rewards for taking on more responsibility, there is growth in the number of respondents whose added responsibilities are at least rec-

ognized and recorded in their job descriptions. The percentage of people who omitted the answer to this question in 1988 is very high and comparison between 1988 and 1998 results is risky. The report of the 1988 survey includes a respondent's comment: "Adding new responsibilities to job descriptions . . . may contribute recognition but not reward. It could perhaps form the basis for future reward." So far, this does not seem to be happening. Ann Goulding (1996) states the case this way:

Declining staffing levels and the commensurate rise in workload for those staffing libraries have left many in library services disheartened. Pressure to work harder can leave staff feeling "put upon" and under considerable strain. Support staff often feel that changes are made with little thought to what the effects further down the chain of command might be. These pressures can leave support staff feeling very depressed about their own positions and that of their library services. . . .

Two crucial factors in their disenchantment are a perceived lack of communication from senior management, and a feeling that they are not being rewarded or appreciated for the extra effort they are expending. . . .

However, although senior managers often stress their awareness of the changes that have taken place with regard to support staff roles and responsibilities and emphasize how much they value their assistants, this message does not always reach staff on the ground. Staff may also feel that lip service is not enough anymore. They want action that proves in hard terms just how much management values them. . . .

Support staff know that much of what they do is not clerical or secretarial although they are often still paid on a clerical scale. Increasingly, assistants believe they deserve a promotion line of support staff grades that increase in difficulty of assignment, personal contacts, and degree of responsibility . . . (p. 135)

Personnel Changes and Technology

In the current survey, a large majority of the total respondents report reductions of personnel in all categories—support staff, librarians, and student workers. There was a definite decrease in the number of support staff at each library where these surveys were distributed. However, 57 percent of respondents do not believe technology is responsible for most of the personnel changes. One library regained some support staff over the past five years, but the number of staff is still lower than was reported ten years ago. Some typical comments regarding the reasons for decrease in personnel: "The cause is more likely to be the cost of technology rather than technology itself." "Personnel decreases along with budget reductions." In all three libraries, the largest percentage of respondents said that technology was not responsible for most of the personnel changes in question 29 (i.e., 53 percent, 68 percent, and 55 percent) (see Tables 17 and 18).

TABLE 17.

QUESTION 29. DURING THE PAST FIVE YEARS MY DEPARTMENT HAS. . .
(CHECK ANY THAT APPLY):

<i>Response Choices</i>	<i>Number of Responses</i>
Increased the number of librarians	5
Reduced the number of librarians	34
Increased the number of support staff	14
Reduced the number of support staff	57
Increased student help	23
Reduced student help	52
Made no change in number of personnel	21
No answer	3

TABLE 18.

QUESTION 30. DO YOU THINK TECHNOLOGY IS RESPONSIBLE FOR MOST CHANGES
IN QUESTION 29?

<i>Response Choices</i>	<i>Number of Responses</i>	<i>Percentage of Responses</i>
Yes	28	24
No	67	57
No opinion	16	13
No answer	7	6

In the 1988 survey, there was a more varied pattern of change among personnel, with a larger number reporting "no change" in numbers of personnel and less personnel reduction. Still, the largest numbers of respondents in 1988 also felt that technological advances were not really responsible for most changes (61 percent of respondents).

The two questions about personnel stability are new questions in the 1998 survey (see Tables 19 and 20). While 51 percent of respondents felt their library's personnel situation is becoming less stable, 46 percent of respondents felt technology had nothing to do with the stability factor. When comparing the numbers of answers concerning technology's role in personnel changes (question 30) to technology's role in personnel stability (question 32), there is perhaps a little less conviction about

TABLE 19.

QUESTION 31. DO YOU THINK THE PERSONNEL SITUATION IN YOUR LIBRARY HAS. . .

<i>Response Choices</i>	<i>Percentage of Responses</i>
Become progressively more stable	4
Become progressively less stable	51
Remained about the same as far as stability goes	42
No answer	3

TABLE 20.
QUESTION 32. DO YOU THINK THAT TECHNOLOGY IS PARTIALLY RESPONSIBLE FOR THE PERSONNEL SITUATION INDICATED IN QUESTION 31?

<i>Response Choices</i>	<i>Percentage of Responses</i>
Yes	29
No	46
No opinion	18
No answer	7

the neutrality of technology’s influence on stability. Question 27 (see Table 21) asks whether or not people have been replaced or displaced by technology. Those respondents who believe people have been both replaced and displaced by technology have moved up from 23 percent in 1988 to 45 percent in 1998. This pattern is reflected in two of the three libraries.

TABLE 21.
QUESTION 27. DO YOU THINK PEOPLE HAVE BEEN. . .

<i>Response Choices</i>	<i>1988</i>	<i>1998</i>
	<i>Percentage of Responses</i>	<i>Percentage of Responses</i>
Replaced by technology	5	7
Displaced by technology	11	11
Both replaced and displaced	23	45
Neither replaced nor displaced	56	33
No answer	5	4

The chart for question 28 (see Table 22) has been adjusted for a minor numerical error in the 1988 survey report. For purposes of comparison between the years 1988 and 1998, the numbers for question 28 have been presented as percentages of the total number of respondents who checked each answer in each year’s survey. The “no answers” have not been included. In 1988, 17 percent of respondents omitted this question. In 1998, 14 percent omitted this question. In both years, the choice checked the most was “There has been no displacement or replacement of people by technology.” Those responses which showed the most change from 1988 to 1998 are:

- There has been no displacement/replacement: from 38 percent down to 24 percent;
- It makes me angry: from 3 percent up to 8 percent; and
- People have been treated badly: from 7 percent up to 19 percent.

The current survey shows positive answers highest and negative answers lowest. In 1988, neutral answers outnumbered positive ones. The

TABLE 22.

QUESTION 28. WHICH SENTENCES BELOW DESCRIBE YOUR FEELINGS ABOUT THE DISPLACEMENT OR REPLACEMENT OF PEOPLE BY TECHNOLOGY IN YOUR LIBRARY?

<i>Response Choices</i>	<i>1988 Percentage of Respondents</i>	<i>1998 Percentage of Respondents</i>
We have a better organization	11	12
We are no better off than before	17	16
It makes me angry	3	8
I feel good about the changes	7	6
People have been treated fairly	8	6
People have been treated badly	7	19
Overall personnel adjustments have been good	15	19
There has been no displacement or replacement of people by technology	38	24

differences in responses of the three separate libraries to the choices in question 28 were more extreme than in other questions.

Decision-Making

The current survey showed that all three libraries have about the same level of staff involvement/lack of involvement in technological decision-making (see Table 23). In 1998, 25-27 percent of staff were involved in decision-making and 73-75 percent were not (see Figure 7). The 1998 response is very different from the response in the 1988 survey, when this question evoked much more variance of opinion among the three libraries. In 1988, the percentages of support staff from the three separate libraries who were involved in decision-making were 7 percent, 24 percent, and 60 percent. There has evidently been a definite increase of involvement at one library and a definite decrease at another. It is very interesting to note that the library which had 60 percent of their staff reporting that they were involved in technology decisions in 1988 also had 25 percent of their staff who felt, at that time, that support staff had adequate involvement. In 1998, with all three libraries at 25-27 percent involvement, no library has more than 7 percent of staff who feel there is enough staff involvement in decision-making. This is added support for the statement made in the 1988 report that "the feeling of satisfaction (illustrated by 'No, I don't think staff should be more involved') increases as the percentage of involvement increases" (Jones, 1989, p. 449). The 1998 survey showed a decrease in satisfaction as staff involvement de-

creased. The widest numerical variance among the three libraries' responses to question 34, concerning whether or not staff has enough decision-making power, are in the percentages of those who had no opinion (including those who did not answer the question) (see Table 24). These percentages were 7 percent, 19 percent, and 23 percent for the three libraries.

TABLE 23.
QUESTION 33. WERE YOU INVOLVED AT ALL IN THE DECISION-MAKING PROCESS CONCERNING THE INCORPORATION OF NEW TECHNOLOGY INTO YOUR WORK AREA IN THE LAST FIVE YEARS?

<i>Response Choices</i>	<i>1998 Number of Responses</i>
Yes	30
No	87
No answer	1

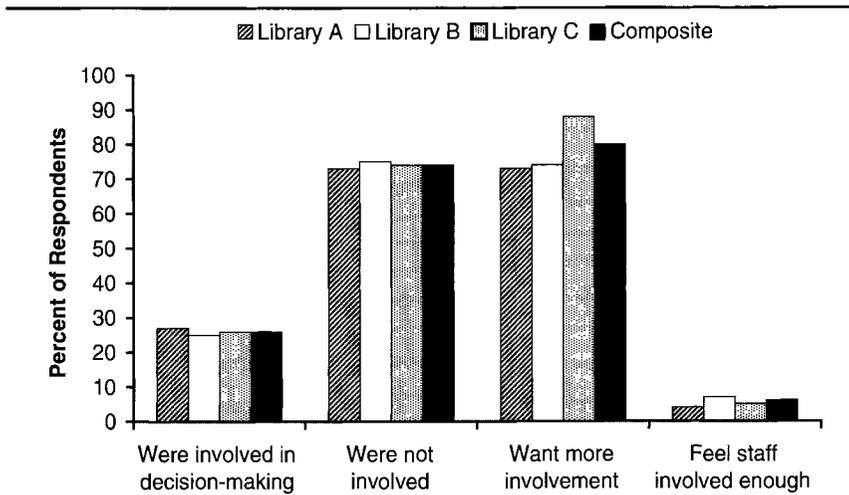


Figure 7. Decision-Making During Acquisition/Incorporating of Technology (1998 Results).

TABLE 24.
QUESTION 34. DO YOU THINK SUPPORT STAFF SHOULD BE MORE INVOLVED IN TECHNOLOGICAL PLANNING AND DECISIONS THAN THEY ARE NOW?

<i>Response Choices</i>	<i>1998 Number of Responses</i>
Yes	93
No	7
No opinion	18

Anne Statham and Ellen Bravo (1990) suggest "that careful planning and continued feedback are required when introducing new technology . . .". They also state that "an important underlying issue is the need to involve the affected workers in the planning process. . ." and that it is also important that "upper management not only *receive* input from workers affected, but that they *pay attention* to this feedback" (p. 126). One astute respondent commented: "Support staff who do the daily work can contribute detail-level information required to make sound, workable technological decisions, and changes. Planning done without this level of detail will require more fine-tuning and implementation time to work out bugs."

Technology and Staff Health

Health and technology is becoming a prominent subject in library literature, with numerous articles on technostress, carpal tunnel syndrome, and ergonomics. In a 1990 study done by Statham and Bravo (1990), technology-related health problems reported most often by supervisors and secretaries were eye strain, muscle strain, exhaustion, headaches, "nerves," and unstable feelings/anger (p. 123). These health concerns emerge in the current survey answers and in written comments as a pressing issue for some library staff who have a very close-up view of the interaction between computer and human worker:

"Many of my co-workers have had to quit or change jobs due to technology-related injuries."

"Technology has generally been an asset [but it] has the price of increased stress and health problems (eyes, lower back, etc.)."

"Carpal tunnel syndrome is rampant . . ."

"Moods are mercurial."

Several respondents commented that there should be additional questions concerning work and health.

The three questions discussed here are new to the 1998 survey and are "testing the waters" questions. Question 26 (see Table 25) deals very generally with the perceived impact of technology or computers on the health of employees.

TABLE 25.

QUESTION 26. THE IMPACT OF TECHNOLOGY ON THE HEALTH OF LIBRARY EMPLOYEES HAS BEEN. . .

<i>Response Choices</i>	<i>Percentage of Respondents</i>			
	<i>Composite</i>	<i>Library A</i>	<i>Library B</i>	<i>Library C</i>
Negative	40	21	14	66
Positive	2	5	0	0
Not significant	25	25	54	13
No opinion	32	49	32	20
No answer	1	0	0	1

Note the large differences among the three different libraries. The strength of the “not significant” and “no opinion” answers may suggest that there isn’t enough evidence one way or another yet. Is this a question of time or the difficulty of positively identifying causal factors of health problems?

“More stressful” and “neither more nor less stressful” are the most-checked answers (see Table 26). People for whom technology has reduced stress are in the minority.

TABLE 26.
QUESTION 23. TECHNOLOGY MAKES MY WORK. . .

<i>Response Choices</i>	<i>Percentage of Respondents</i>			
	<i>Composite</i>	<i>Library A</i>	<i>Library B</i>	<i>Library C</i>
More stressful	37	36	41	37
Less stressful	14	9	18	16
Neither more nor less stressful	46	53	36	42
No answer	3	2	5	5

The decision about which job stress is directly or indirectly associated with technology is left up to the respondent (see Table 27). The measurement of how much certain computer/technology activities affect personal stress levels requires medical and/or psychiatric expertise. Nevertheless, the *perception* or *feeling* of increased stress expressed by a large segment of staff needs to be taken seriously by employers and supervisors. Virginia Bartlett (1995) writes: “The existence of technostress is indisputable There are courses of action that need to be taken by the computer industry. In addition, there are steps that need to be taken by library administrators to assist their employees and ensure success of the available new technologies. Finally, there are steps the employee can take to reduce his or her own technostress” (p. 228). Statham and Bravo (1990) suggest that loss of control and intensifying job pressures often center around the

TABLE 27.
QUESTION 24. IF TECHNOLOGY HAS RAISED THE STRESS LEVEL OF YOUR JOB, IS IT BECAUSE. . . (CHECK ANY PHRASES WHICH APPLY):

<i>Response Choices</i>	<i>Composite Number of Responses</i>
There is too little training	31
Things are too complicated	15
The rate of change is too fast	14
Pressure to produce is unrealistic	19
Other	10
No, it has not affected stress level	36
No answer	15

introduction of new technologies and are associated with stress and physical problems. They mention better communication, better staff training, staff involvement in planning, and careful timing of installations as some ways to prevent health problems (pp. 124-26). Dyckman (1992) suggests cross-training and diversification of both activity and responsibility as ways to avoid physical problems. Ergonomic workstations with comfortable chairs, wrist rests, and glare controls are also important.

Management and Technological Advancement.

These questions deal with support-staff opinions on how the introduction, addition, and conversion of automated systems and technological advances are being managed in their libraries.

Some aspects of the comparative results for the two surveys in 1988 and 1998 are similar (see Table 28). The assertion contained within the "yes" answer is that the direction that library technology development is taking is basically desirable—or at least that it is inevitable—and that we must keep up with other libraries. There are a few more "no" answers in 1998, and there is a sizable percentage of respondents who feel the question is too simplistic to answer without qualifying statements. The latter group has shrunk since 1988, however, and the "yes" responses in 1998 actually have the majority voice (52 percent to 47 percent).

TABLE 28.
QUESTION 8. DO YOU BELIEVE THAT MOST LIBRARIES SHOULD MOVE INTO NEW AREAS OF TECHNOLOGY AS QUICKLY AS THEY CAN AFFORD TO DO SO?

<i>Response Choices</i>	<i>1988 Respondents</i>	<i>1998 Respondents</i>
Yes	63 (47%)	61 (52%)
No	9 (7%)	11 (9%)
No opinion	11 (8%)	9 (8%)
The question is too simplistic as stated	50 (38%)	37 (31%)

In 1988, the most-checked answer for all three libraries was "too slow." In 1998, the largest number of respondents at each library said "just right" and the overall satisfaction with progress increased to 58 percent (see Table 29). When asked about the introduction of new technology *into their own work area*, results were similar, though perhaps a little more cautious (see Table 30).

For question 17, a number of people checked more than one choice. The reference/research department had the highest numbers in all three libraries, while cataloging and information delivery/interlibrary loan followed and were numerically very close in all three libraries (see Table 31). There seems to be no strong relationship between the responses chosen

TABLE 29.

QUESTION 16. HOW WOULD YOU RATE YOUR LIBRARY'S PROGRESSION TOWARD AUTOMATION?

<i>Response Choices</i>	<i>1988 Percentage of Total Responses</i>	<i>1998 Percentage of Total Responses</i>
Too fast	10	12
Too slow	46	20
Just right	32	58
No answer	12	10

TABLE 30.

QUESTION 10. DO YOU FEEL THE PACE AT WHICH NEW TECHNOLOGY IS INTRODUCED INTO YOUR WORK AREA IS. . .

<i>Response Choices</i>	<i>1988 Percentage of Total Responses</i>	<i>1998 Percentage of Total Responses</i>
Too fast	15	16
Too slow	37	26
Just right	40	48
No answer	8	10

TABLE 31.

QUESTION 17. IN WHAT DEPARTMENT OF THE LIBRARY DO YOU THINK THE GREATEST POSITIVE TECHNOLOGICAL STRIDES HAVE BEEN MADE?

<i>Response Choices</i>	<i>Number of Responses</i>
Cataloging	27
Reference/Research	51
Acquisitions	10
Serials	6
Circulation	21
Information Delivery/ Interlibrary Loan	24
Other	0
No answer	15

and the individual respondent's own department. That is, there was no discernible pattern of inclusion or omission of respondents' own departments in the replies to this question. The statistics show a definite change in opinion between 1988 and 1998. In 1988 the cataloging department was very definitely perceived as having made the greatest technological strides, garnering the highest number of responses at all three libraries. The current change was predicted in a mild way in the 1988 survey report: "While support staff see technical services collectively as having an edge on technological progress, the awareness of progress in public service areas is strong" (Jones, 1989, p. 448).

Issues that will probably become of progressively greater concern to library staff in the future are those related to workforce control or productivity management by means of technological surveillance. Wendy Abbott (1989) discusses these issues and says: "Some studies have shown how management has deliberately used new technology to gain greater control over their workforce" (p. 162). Abbott looks at Shoshana Zuboff's (1982) findings concerning managerial surveillance of workers by means of technologically gathered information on employee output, and the resultant changes in supervisory style and social interaction. Estabrook, Mason, and Suelflow (1992) discuss "interactions between the use of information technology and issues of control" (p. 231). Question 25 (see Table 32) is an exploratory question designed to see whether or not support staff believe that technology is used to monitor their work.

TABLE 32.

QUESTION 25. SUPERVISORS IN MY LIBRARY USE TECHNOLOGY TO MONITOR STAFF PRODUCTIVITY. . .

<i>Response Choices</i>	<i>Number of Responses</i>
Yes	27
No	42
No opinion	46
No answer	3

While many staff members do not think technology is being used to monitor their productivity, many simply do not know. It is an issue to watch. Ethical and psychological implications as well as implied changes in work processes should be of concern to administration, faculty, and staff alike.

Philosophical or Social Implications

Two questions deal with how support staff view the continuing technological transformation as social-psychological history (see Tables 33 and 34). Each person's answers to these questions helps determine that person's philosophical attitude toward his/her work. Approximately 30 percent of the respondents chose not to answer either question.

The largest number of staff still see people as "in control," but the percentage who chose this answer has changed from 57 percent in 1988 to 38 percent in 1998.

Several respondents checked more than one response to the choices for question 19 (see Table 34). The wording of response-choices for this question was changed somewhat from the 1988 survey for purposes of clarification. However, in both surveys, the stronger responses were "Does none of the above," "No opinion," and "Leaves people free to be creative." Overall, respondents do not think automation has a negative effect on creativity or influences people to be more like machines.

TABLE 33.
QUESTION 20. WHICH OF THE FOLLOWING STATEMENTS MOST CLOSELY MATCHES YOUR OPINION REGARDING THE PRESENT RELATIONSHIP BETWEEN PEOPLE AND TECHNOLOGY?

<i>Response Choices</i>	<i>1988 Respondents</i>	<i>1998 Respondents</i>
People are the masters and technology is a tool we are using wisely	57%	38%
Technology is becoming master and people are becoming its subjects	22%	32%
No opinion/no answer	21%	30%

TABLE 34.
QUESTION 19. DO YOU THINK THAT AUTOMATION BASICALLY. . .

<i>Response Choices</i>	<i>1998 Number of Responses</i>
Leaves people more free to be creative	23
Restricts creativity	18
Dehumanizes people	12
Does none of the above	30
No opinion/no answer	37

CONCLUSION

In general, the opinions and reactions of support staff to the effects of technological change in their work is still positive but with more reservations than in 1988. See Figure 4 for one example.

Staff are better satisfied in 1998 with the pace at which their libraries are becoming automated. However, a higher percentage of 1998 respondents feel pressed to keep up with the learning required by changing technologies. There has been a shift of focus from automation in cataloging and other technical services areas to technological progress in research and reference departments.

Staff training is a continuing need. Libraries are trying to deal with this need in many ways. Clark and Kalin (1996) describe, for example, a mandatory twelve-hour automation skills training course for new Pennsylvania State employees. It is designed not to teach specific skills or database content, but to help decrease anxiety and increase comfort around technology (p. 32). The desire and need for training appears in almost every area in which library technology is discussed. Training is mentioned as a morale builder, an assurance of competence, a cure for technostress, and a way of creating the image of a good, carefully planned library whose service-oriented staff are experts in their field. Library staff see improvement since 1988 in the training available to them, but in general they rate the training as adequate rather than excellent.

There is a definite increase since 1988 in the number of respondents who say that technology makes their work harder, and a moderate increase in people who affirm that technological progress or change is making very little difference in the ease, speed, or accuracy of their work.

While approximately half of the respondents feel technology has not affected the amount of control they have over their workday, 33 percent feel it has given them more control. It was indicated that more workstations would allow staff to have better control over their schedules.

Lack of attention to workload changes and to recognition of good work are among the most severe causes of demoralization and disappointment for support staff. The responses to questions on workload and responsibilities, along with extra comments written on the survey returns, seem to indicate that, as the number of support staff decreases, remaining staff consistently take on heavier workloads and more responsibility, but that there is little tangible reward for doing so. While appreciative words and added trust exhibited toward an employee are desirable, universities and their libraries really need to address salaries and the distribution of merit raises.

There is a growing concern among library employees about health problems which may be directly linked with the concentrated use of computers or may be more loosely related to the stress of continued or intense technological change. In my opinion, every library should have an officer or committee to be a watchdog for employee health, pressing for work-pattern changes and equipment that could relieve or prevent physical or emotional illness. Resources available to many campuses include wellness offices and work-environment experts who can analyze conditions and advise remedial or preventive measures.

The survey questions on the long-range philosophical implications of the technological revolution are simplistic. However, they reflect numerous concerns of many people wondering whether technology is actually controlling us to the extent that we limit our decisions to those that are compatible with our technology and "regard the menu of alternatives offered up on a particular screen as a world sufficient unto itself" (Swan, 1993, p. 44). For some respondents, questions about how computers may gradually change people and the way people think may seem too divorced from everyday activities to worry about. Of those responding, 30 percent omitted these questions. The survey indicates that 38 percent of respondents believe people are in control of technology and 32 percent believe technology is becoming the master. Of those responding, 15 percent believe that automation restricts creativity, and 10 percent believe automation dehumanizes people. Most respondents believe automation has little effect on diminishing creativity or on dehumanization. However, with more serious thinking about the far-reaching effects of technology on humanity, better decisions might be made right now—by choosing and us-

ing technologies with discrimination and with the well-being of employees among our top priorities. In a very useful review column on books about technostress, Osif and Harwood (1996) express hope:

Are we doomed to be forever behind, frantically trying to learn what will soon be out-dated, moving daily toward a personal "crash"? The evidence indicates this is not the inevitable result. Thoughtful planning and attention to the realities of technology can alleviate the problem and keep the new technologies, not the masters of our lives, but useful tools for work and leisure. (p. 46)

The involvement of support-staff in planning and decision-making is an exceedingly important issue. We *need* to have unity and goodwill among all library employees in order to make the new technology work for us. Goble and Brown (1996) write: "Librarians must consider the 'participative structure' that enables all levels of staff to engage in the evolution of change. This will require the sharing of power, active listening, encouragement, and, at times, conflict resolution" (p. 199). In 1998, the percentage of staff that was involved in making decisions about the technologies that shape their workdays and have an impact on almost every work activity stands at between 25 percent to 27 percent. This is not much of an improvement from 1988 when the composite percentage was 23 percent. What is best for our libraries really cannot be separated from what is best for library employees. In our support staff we have an invaluable resource of educated people who have worked a long time in the library environment. Support staff will help us to make better technological decisions and smoother transitions. To consult with and listen to people of considerable experience, education, and intelligence is to grasp one of our best opportunities.

APPENDIX

LIBRARY SUPPORT STAFF LOOKS AGAIN AT TECHNOLOGICAL CHANGE IN THE WORKPLACE: A QUESTIONNAIRE

There will be a place for comments at the end of the questionnaire in case you wish to explain or qualify an answer. Also, feel free to write comments in the margins as you work through the questionnaire. Your extra comments will be useful.

List technological systems or equipment that have been acquired by your library during the last ten years and that have affected your work.

_____	_____
_____	_____
_____	_____

PLEASE CHECK THE WORD OR PHRASE THAT BEST COMPLETES OR ANSWERS THE NUMBERED STATEMENT.

1. **As the development of technology progresses, my work gets:**
 easier harder no change

2. **As new technology is added, the speed with which I accomplish work:**
 almost always increases almost always decreases
 stays about the same overall

3. **Computers make my work production:**
 More accurate Less accurate
 Neither more nor less accurate

4. **As technology expands, my workload:**
 decreases increases stays about the same

5. **My feelings about working with computers are described by the words: (check any that apply)**
 excitement irritation enjoyment
 dislike tolerance pleasure
 inadequacy competency frustration

6. **When I need to learn a new technology I:**
 want to learn it, but feel uneasy look forward to learning it

18. **Do you feel that, overall, technology has improved the accuracy of the records kept in the library?**
 yes no no opinion
19. **Do you think that automation basically:**
 leaves people more free to be creative restricts creativity
 dehumanizes people does none of the above
 no opinion
20. **Which of the following statements most closely matches your opinion regarding the present relationship between people and technology?**
 People are the masters and technology is a tool we are using wisely
 Technology is becoming master and people are becoming its subjects
 No opinion
21. **Technological advances have:**
 added more responsibilities to my job
 diminished the responsibilities of my job
 had no effect on the amount of responsibility I carry
22. **When additional responsibility is assigned at the library, it is reflected in the: (check any that apply)**
 pay-check job description
 respect shown to the individual none of the above
23. **Technology makes my work:**
 more stressful less stressful
 neither more nor less stressful
24. **If technology has raised the stress level of your job, is it because:(check any phrases which apply)**
 there is too little training the rate of change is too fast
 things are too complicated pressure to produce is unrealistic
 other no, it has not affected the stress level of my job
25. **Supervisors in my library use technology to monitor staff productivity:**
 yes no no opinion
26. **The impact of technology on the health of library employees has been:**
 negative positive
 not significant no opinion
27. **Do you think people have been:**
 replaced by technology
 displaced by technology
 both replaced and displaced by technology
 neither replaced nor displaced by technology

28. Which sentences below describe your feelings about the displacement or replacement of people by technology in your library?

- We have a better organization
- We are no better off than we were before
- It makes me angry
- I feel good about the changes
- People have been treated fairly
- People have been treated badly
- Overall, personnel adjustments have been good
- There has been no displacement or replacement of people by technology

29. During the past 5 years, my department has: (check any that apply)

- increased the number of librarians
- reduced the number of librarians
- increased the number of support staff
- reduced the number of support staff
- increased student help
- reduced student help
- made no change in number of personnel

30. Do you think that technology is responsible for most of the personnel changes indicated in question 29?

- yes no no opinion

31. Do you think the personnel situation in your library has:

- become progressively more stable
- become progressively less stable
- remained about the same as far as stability goes

32. Do you think that technology is partially responsible for the personnel situation indicated in question 31?

- yes no no opinion

33. Were you involved at all in the decision-making process concerning the incorporation of new technology into your work area in the last five years?

- yes no

Please describe the nature and extent of your involvement, if any.

34. Do you think support staff should be more involved in technological planning and decisions than they are now?

- yes no no opinion

Please comment on any of the above questions, or share any other thoughts you have on the effects of technology in the library, on your job, etc.

Please fill out personal information on the back of this page.

PERSONAL BACKGROUND

Education

Do you have:

- A high-school diploma
- An associate degree (A.A. etc.)
- An undergraduate degree (B.A., B.S., etc.)
- One masters degree
- Two masters degrees
- Ph.D. degree
- Other degrees, training, or courses

Please describe "other degrees, training, or courses":

What was your major subject(s) in college?

What was your minor subject?

What were your post-graduate-study subject areas?

Have you at any time had computer or computer-related courses?

If so, please describe:

Experience

In what library department do you work?

How long have you had your present position?

What is your job title?

What were your previous job titles?

How long have you worked at this library?

What is your total number of years of library work-experience?

Comments or additional information:

Individuals who answer this questionnaire will remain anonymous and results will in no way be presented or tabulated to reflect negatively on a particular library.

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