Microcomputers In Special Libraries: A Survey

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The early use of computers in libraries was centered around huge mainframe machines. The utilization of microcomputers has revolutionized computer-based library applications. These small but powerful machines will fit on a desk top, some will fit into a briefcase, and others may be purchased with a variety of peripheral devices.[1]

Librarians throughout the country have begun to employ a variety of computer programs that have been developed for specific library functions. All types of libraries, including special libraries, have found that microcomputers are both profitable and efficient. While microcomputers have taken the drudgery out of many routine tasks performed in libraries, Lundeen contends that the application of microcomputers in libraries has not been as extensive as one might have expected. One major reason is that microcomputer systems have been rather limited in the amount of mass storage that they can handle.[2]

A survey of the 121 special libraries listed in the Directory of Special Libraries in North Carolina was conducted to determined the extent of use of microcomputers in special libraries in North Carolina. The survey instrument, consisting of 21 questions, was designed to obtain information about types of microcomputers, application programs used, and some personal information about the librarians.

Survey Findings

Responses were received from 95 special librarians or 79 percent of the libraries surveyed. The first question asks whether or not the respondent had ever used a microcomputer. Eighty-three or 68.6 percent answered in the negative and did not complete the other 20 questions.

Of the 83 respondents who indicated that they had had no experience in the use of the microcomputer and that their libraries did not have one, several provided interesting, and concerned comments. One librarian wrote, "Our library is currently investigating ways and means for creating an entire catalog for our pamphlet collection. We will be looking at Xerox's new word processing system as well as microcomputer capabilities..." Another librarian replied, "Our library does not have a microcomputer ... we interviewed three vendors about hardware and software applications for our INDEX project. All three determined that microcomputers at that time (January, 1981) could not meet our needs..."

Twelve librarians completed the questionnaire. Table 1 shows that these respondents represent libraries from both the profit and non-profit environments. The 12 librarians who responded affirmatively answered most of the questions on the survey instrument.

TABLE 1
Type of Special Library

Type of Library	Number	Percent
Academic	3	25%
Health Science	3	25%
Government Agency	2	16.6%
Industry	2	16.6%
Business	1	8.3%
Public Utility	1	8.3%
Total	12	100%

Equipment

Question two sought three answers: (a) what machine have you used, (b) what kind of microcomputer would you prefer using, and (c) why? The data presented in Table 2 indicate that two libraries had three different microcomputers. The most frequently cited microcomputers are: the APPLE listed by four libraries, the Radio Shack TRS-80 listed by three libraries, and Atari listed by two libraries. The other models listed are: Nexiron, North Star, Cromenco, Textronix 4051, Vectograph and SOL.

Librarians who expressed preference for another type of computer wanted an IBM, a Hewlett-Packard or an APPLE II. The librarian who expressed preference for IBM indicated that this computer had a large memory and was very reliable. The librarian who preferred a Hewlett-Packard indicated that it has a capability for graphic display of chemical structures. Several preferred to continue using what they had and one librarian indicated her preference to continue with Radio Shack because "it is simple to use."

Question three sought information on the ownership of microcomputers —whether or not they belonged to the institution or were the personal property of the librarians. Eight librarians indicated institutional ownership and four indicated personal ownership.

"How were you introduced to the microcomputers?" question four asks. Three librarians were introduced through readings, two stated that their interest developed as a result of writing programs for mainframe computers; two learned about them in classes; two had received recommendations from computer service agencies; one learned from a friend; one learned on the job; and one learned after making a purchase.

The fifth question asks how librarians obtained current information about microcomputers. Many kept up-to-date via several sources. The largest number, seven, obtained information from computer magazines; three from friends and classes, two from user groups and two from computer companies.

Question six inquires about the greatest obstacle to full use of a microcomputer by librarians. The responses were as follows: lack of adequate time,

TABLE 2

Type(s) of Microcomputers used and/or preferred

Type of Microcomputer	*Microcomputer Preferred and Reasons*
Apple II	IBM.
Nexitron 2-D, Textronix-4051, and Apple II	Preferred to use present unit. The librarians have had no experience with other microcomputers.
Cromenco 2-D, Textronix-4051, and Apple II	Preferred to use the Hewlett-Packard 26478. This unit has the capability of graphic display of chemical structures.
IBM	None. Satisfied with present unit.
Radio Shack TRS-80	Preferred to use present unit.
Apple II	Undecided.
Apple II Plus	IBM. It has personal information capabilities.
Atari 400 (32K)	No Response.
Radio Shack TRS-80	Preferred to use present unit. It is simple to use.
Vector Graphic 3030	No Response.
Sol	No Response.
TRS-80 Model I-Level (2)	Apple II.

Table 3

Characteristics and Capabilities of the Microcomputers Used

Libraries	Model	Total Number in Dept.	Operating Systems	Program Language	Can it Communicate with Large Machine?	Special Equipment
1	Apple II	1	3	Pascal and Basic	Yes	—
2	North Star	1	1	Basic, Pascal and Data Base II	Yes	Quad drive
3	Textronix	1	1	Basic and Fortran	Yes	—
4	IBM	78	100 or more	No response	Yes	Terminal
5	Radio Shack TRS-80	2	2	Basic	No	—
6	Apple II Plus	2	2	Basic Pascal	Yes	Micro-Modern Printer
7	No Response	—	—	—	—	—
8	Vector Graphic	1	1	Basic	Yes	—
9	Radio Shack TRS-80	(1) Personal Information Machine	—	—	—	—
10	Do not use any microcomputer	—	—	—	—	—
11	No Response	—	—	—	—	—
12	No Response	—	—	—	—	—

inadequate disc storage, lack of funding for memory and software, screen size, and lack of software.

Question seven sought information on the type of microcomputer available at the parent organization, the total number in use, the operating systems, programming languages, the communication capability with large computers, and special equipment. Table 3 presents the types of computers and the total number in use. The largest number cited was 78 IBM 5520s used by the Duke Power Company in Cornelius, North Carolina. The next highest number cited was two APPLE II Plus and Radio Shack TRS-80 Model IIs. Duke Power has more than one hundred operating systems, with others listing from three to one. BASIC, PASCAL, FORTRAN and DATA BASE II programming languages were mentioned most frequently. Six librarians indicated that their microcomputers had the capability to communicate with large machines.

Question eight is in two parts; it attempts to ascertain whether the microcomputers were stand alone machines or whether they were used in a network. Nine respondents indicated that the machines were in stand alone mode. There were no librarians using microcomputers in network mode at this point in time.

Software, Applications and Services

Question nine is divided into 10 parts and an attempt was made to obtain information on the major applications that are being made with the microcomputer. Table 4 shows that the largest number of applications is for text preparation. The next most frequent use is for record keeping, followed by such applications as information retrieval, indexing, and introducing students to microcomputers. The services mentioned include: consulting for micro users, software development, software maintenance, documentation, and others.

TABLE 4
Applications

Applications	Number of Libraries (N = 12)	Percent
Text preparation	8	66.0%
Record keeping: employee, clientele or patrons	7	58.3%
Other	4	33.3%
Data processing (e.g., for laboratory experiments)	3	25.0%
Entry level programming purposes	3	25.0%
Research in the use/design of micro hardware/software	2	16.7%
Advanced programming	1	8.3%
Monitoring lab experiments	1	8.3%

Question number ten sought information on what services were provided for library owned microcomputers and by whom. Eight librarians indicated that they received consultation for micro users, software development, software and hardware maintenance, and documentation support. These individuals were provided these services by computer center staff and individuals from other offices of the libraries' parent organiations.

Question 11 asks who provides the software for the microcomputer and includes a description of the types provided. Sources that the respondents could choose from were vendors, a computer center, the user, and other. Each vendor provided software for his brand. One librarian indicated that Dr. Hines at the University of North Carolina at Greensboro provided software for his library. Only one librarian indicated that software is received from the local computer center.

Question 12 asks who maintains the user-contributed software. The largest number of respondents, seven, did not respond to this question. One listed computer center, one indicated users; three marked other and indicated computer systems analyst and the librarian.

Question 13 asks about the types of microcomputer services the respondents felt would be of most benefit to the users. Their choices were: provided consulting service, provide software, develop micro users group, and provide micro newsletters.

Question 14 requests a description of the library's micro users' community. Two indicated that they have a micro newsletter; two indicated that they are in a micro users group; only one reported being in a state or national users group. Five subscribe to micro publications and two said that there is no community as yet.

Management Considerations

Question 15 sought to discover who introduced the microcomputer in the library. The computer center introduced it in one library; three gave credit to a faculty member; and one indicated that a department was responsible. Among those who checked other, the sources given were Dr. Hines, a bookkeeper, the institution, and a data base workshop.

Question 16 asks why the first microcomputers were acquired. Eight indicated that they were procured for a special purpose. One said they were bought to investigate their general capability. Describing the acceptance of microcomputers by the parent organziation was the essence of question 17. Four were enthusiastic from the beginning; one indicated a preference for large or medium sized machines. The general comments about the acceptance of the microcomputer by the library resulted in three varying responses: slow to accept, too new, and well accepted.

Librarians were asked in question 18 to indicate by marking "yes" or "no" if they are planning to acquire additional microcomputers in the future. Only two responded in the affirmative. Of the two who answered yes, one wanted to

acquire an APPLE III Plus for record keeping and word processing. This machine would be used in the office. The second wanted a Textronix or Hewlett-Packard for record keeping.

Question 19 was posed to see if changes in purchasing policies for microcomputers were desired. Only two librarians responded, and they were satisfied with the current policies.

Question 20 asks what changes on microcomputers the librarian would like to see. Five persons responded to this question and suggested such changes as: (1) decrease in cost, (2) increase in memory with decreased size, (3) better documentation, (4) better software, and (5) standardization.

Conclusions and Recommendations

Few special librarians in North Carolina were found to be aware of the capabilities of the microcomputer for library operations and functions. The librarians who have microcomputers were making use of a wide range of applications which include text preparation, record keeping, data processing, information retrieval, indexing, and computer literacy activities. This study suggests that there is a need to consider the trend and pace of developments in the field of automation.

The fact that only a few librarians were using microcomputers should make the offering of continuing education programs a high priority for library education programs and professional associations.

The fact that a lack of funding was mentioned by the responding librarians as the major deterrent to the acquisition of microcomputers and related equipment appears to be germane to the issue of budgeting.

Finally, more information is needed on the use of microcomputers in special libraries on a nationwide basis. A literature search conducted for this study did not yield information to indicate that a survey has ever been conducted. The lack of such a survey prevents state and national comparisons.

References

1. Gerald Lundeen, "The Role of Microcomputers in Libraries," *Wilson Library Bulletin*, 55 (November, 1980):179-180.
2. Ibid., p. 182.

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