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ABSTRACT

The 1997 volume of Rural Libraries includes two issues containing seven articles. Articles are: (1) "Information Access through Electronic Databases for Rural Public Libraries" (Kitti Canepi); (2) "Bookmobiles in the Burbs" (Joyce Voss); (3) "Bookmobile Survey" (Liam Kennedy); (4) "Connections: Internet in Rural Pennsylvania Libraries" (Kathryn Saupp); (5) "KCNET: A Rural Area Network Model" (Judith Yoho); (6) "Public Library Service in Nigeria: Clientele Evaluation of Offa Township Library" (J. F. Opaleke); and (7) "Outreach and the Public Need" (Judith A. Drescher). The final section, "Bookmobiles: A Bibliography of Resources" (Laura Blasingham). Contains 18 pages of references. (SV)

Rural Libraries, 1997

Mary Lou Pratt, Ed.

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Center for the Study of Rural Librarianship
Department of Library Science
166 Carlson Building
Clarion University of Pennsylvania
Clarion, Pennsylvania 16214

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Mary Lou Pratt

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The article by Joyce Voss has been adapted from a presentation given at the 1995 conference, The Great American Bookmobile Conference II, held in Grantville, Pennsylvania.

The article by Kathryn Saupp was completed as a part of the course, Public Libraries in Rural America, at Clarion University of Pennsylvania.

Information Access Through Electronic Databases For Rural Public Libraries

by Kitti Canepi

Abstract

Electronic databases allow rural libraries to expand information access beyond the limits of their material collection. How are these libraries to know which databases best meet the needs of their clientele? Research done at the onset of this project revealed no previous studies on the ability of databases to answer real questions. In this study, public library patron questions received by the Arizona State Reference Center were searched on ten different databases recommended in William Katz's *Introduction to Reference Work*, 6th edition, and available through DIALOG Online Services. Given the limitations and exploratory nature of this study, the results indicate that of the databases tested, the set of Books in Print, Magazine Database, ABI/INFORM, PAIS, and GPO Publications could qualify as a set of databases that would enable rural public library staff to find sources for 90% of the patron requests for information not found within the library.

I. INTRODUCTION AND STATEMENT OF THE PROBLEM

Discussion of the Research Question

We are at a crossroads in rural America regarding the information age; we can seize the opportunity to use technology to foster new rural economic growth independent of physical location, or be left far behind as technology rushes onward. To avoid the latter scenario will take political commitment and foresight, telecommunications availability, and "new and expanded roles for some established rural institutions," including libraries (Wilkinson 1991). The library profession is gradually shifting focus from maintaining collections to providing access to information (Malinconico 1992, Corbin 1993). In rural communities, the library is often one of the few information resources for local citizens.

Clarion University professor Bernard Vavrek, in his 1993 assessment of rural public libraries, notes the disparity between "the informational needs of rural Americans and their use of the public library to meet those needs" (Vavrek 1993). Financial resources tend to be especially limited in rural areas: every dollar spent needs to have maximum effec-

tiveness. These libraries cannot afford to build large collections of information materials; reference sources, therefore, should focus on their ability to be a gateway to the wider world of information.

Electronic databases are resources that provide improved information access. Within the space required for a single computer, a user can retrieve data from numerous sources. But this service has fees attached, and that requires choices. Libraries need to be able to evaluate databases prior to selection. They may examine reviews and product summaries for depth of coverage, update frequency, and technological requirements, but what does that tell them about the database's ability to answer real questions? How are libraries to know which databases best meet the needs of their clientele?

Statement of the Research Problem

Which set of electronic databases would enable rural public libraries to meet 90% of the patron information requests that cannot be answered within the collection?

Statement of the Hypothesis

It is hypothesized that a specific selection of databases would enable rural public library staff to find sources for 90% of the patron requests for information not found within the library.

Definition of Terms

Computer technology has had a positive influence in libraries, not only because of the ability to store large amounts of data, but also for the ability to retrieve precise bits of data from the whole more quickly than manual methods. Many library reference materials have been converted into machine-readable form and are now available electronically. Entire texts of articles and other important pieces of information have also been digitized to enable direct computer access. The two major formats for these types of electronic databases are CD-ROM and online. CD-ROM stands for Compact Disc—Read-Only Memory and consists of a 4.75-inch disk, similar to a music CD disc, that can hold up to 250,000 pages of information (Katz 1992). Both indexes and basic reference works (directories, encyclopedias and handbooks) are available in this format. Some of these are CD-I, or Compact Disc Interactive, which include video images, and some are Multimedia, meaning they include both images and sound. Online means that the database is residing on a large computer somewhere which the user accesses over a telecommunications link. Retrieval of information is easier with this format, since you are taking advantage of the larger

computer's capabilities, and the information tends to be more current since the database owner can update it as often as they like at less expense than remastering CD discs. A disadvantage to online databases is that you generally pay per each minute or hour of connect time. This may become less of a factor as more databases become available over the Internet.

Information access relates to the ability to find information outside the physical limits of the local library. This includes finding out what information is available, where it is located, and how to get it. This ability is very important in rural communities where distance can cause isolation, where the library is one of few resources available, and where limited funds result in small collections of print materials. This study focuses on the needs of rural libraries. "Rural" is defined by the Bureau of the Census as "places of less than 2,500" in population and places outside incorporated and census designated places, including the rural portions of extended cities (1990 Census of Population and Housing 1993). The main function of this definition is to distinguish rural areas from "urban" areas. To further separate urban and rural territory in the vicinity of large places, the Census Bureau uses the term "urbanized area", which is comprised of a central place and surrounding densely populated territory (at least 1,000 people per square mile) that together have a minimum population of 50,000 persons (1990 Census 1993). Between these two Census figures, the Center for the Study of Rural Librarianship uses "non-metropolitan" places (i.e. outside a metropolitan area) with a population of less than 25,000 to define the term rural (Vavrek 1993). This definition is also used by the American Library Association (Mumma 1991). By this definition, approximately 80% of the public libraries in the United States serve rural populations (Cox 1993).

Underlying Assumptions

One of the assumptions made for conducting this research is that Arizona is primarily a rural state. The 1990 Census lists Arizona as having a total population of 3,665,000; 87.5% of that population live in a small number of urbanized areas. 2.2 million out of the 3.6 million total population live in the metropolitan area of Phoenix-Mesa, 667,000 live in Tucson, and the remainder are spread out over approximately 130,000 square miles. Other western states generally considered rural show similar statistics: 82.4% of Colorado's population live in urban areas concentrated mostly in Denver-Boulder; 73% of New Mexico's population live in urban areas, mainly in and around Albuquerque; 87% of Utah's population live in the urban Salt Lake-Ogden area; and 88.3%

of Nevada's population live in urban areas, divided between Las Vegas and Reno. All of these states have a small number of urban areas which account for the majority of the population count, with the remainder of the population spread out over vast territory.

Another assumption made for this study is that the questions asked by library patrons in a given period of time are representative of the kinds of questions normally asked on an ongoing basis. Therefore, databases that can provide answers to randomly chosen sample questions from a given year should do equally well at providing answers for future questions. A third assumption relies on the integrity of volunteer study participants; that they will perform to the best of their ability, that their methods are appropriate, and that their results are legitimate.

Limits of the Research

The databases chosen for this study were limited to a select group of reference and citation databases recommended in William Katz's *Introduction to Reference Work*, 6th edition and also available through DIALOG Online Services. The rationale for this was that a public library considering first time access to electronic databases would likely depend on a recognized authority and an established service. This study was designed to be exploratory, rather than exhaustive, which called for limitations to the number of databases studied. By using a single service to access all of the tested databases, a common search interface could also be maintained. Ten databases were eventually selected based on these two criteria. It was not considered pertinent to this study to ensure that all subject areas were covered among the selected databases, nor to do stratified random sampling of the study questions by subject area. The purpose of this study was to mirror rural library situations where patron questions are unpredictable and not likely to cover all subjects. Recommendation and availability were the primary criteria for database selection, and simple random sampling was used to pull the sample questions.

Another limit to this project is that volunteers were used to do the actual database searches without controlling for their skill level or search methods. Being able to complete the project was given priority over strict control for every possible variable. The search results were checked for validity, however, through a separate quality control check of random question and database combinations by two more experienced searchers. All of the participants in this study were graduate Library Science students at the University of Arizona at the time of the study. While the majority of them were not experienced in using DIA-

LOG, they all were experienced with information searching and with the use of electronic resources. This reflects actual conditions in rural public libraries where database experts are rarely available. The use of experts would have lent a greater air of objectivity closer to that of a lab study than a field study. It is also recognized that the ideal way to verify the results of this study would have been to replicate it entirely by two different search groups who would record their strategy, compare results, and then repeat the process. Because such measures were not done here, it is suggested that this be viewed as a pilot or exploratory study.

Significance of the Research

Rural libraries need to gauge the effective and efficient use of their resources even while exploring the use of technology in providing information access to their community. Perhaps the most significant and unique aspect of this study is that it is aimed at demonstrating the practical, versus theoretical, use of electronic databases. While reviews are often available, libraries still have only trial and error to determine whether a recommended purchase was indeed the appropriate one for their type and size library. Since libraries have limited funds that force them to be very selective in their purchasing decisions, they would benefit greatly from learning the results of someone else's trial and error, or from having an available source that tells them which databases are best suited to their type of library. Trial and error experiences are often shared through conferences and publications. A source that lists which databases are best suited to which type of library does not currently exist.

II. LITERATURE REVIEW

Review of Relevant Literature

A joint congressional hearing in 1982 addressed "The Role of Libraries and Information Technology" in regards to rural America (Joint Congressional Hearing 1982). Oral testimony included a number of statements concerning the need for libraries to be "the focal point for all the information needed by the community," since it is not economically feasible for every rural resident to have direct access to all of the existing databases and information systems (Margaret Warden, former Montana Senator, Joint Congressional Hearing 1982). In Kenneth Wilkinson's article "Information Access in Rural Areas" (1991), he points out that "[d]istance is perhaps the most enduring characteristic of the quality we call 'rural,' and distance impedes access." By creating a community information access point through the local library, the limi-

tations of distance can be reduced. Library staff can also serve as “the human link between the learner and the equipment as we adopt more and more technology” (Dr. Betsy Peters, University of Wyoming, Joint Congressional Hearing 1982). The rural library clearly is “a link in the resources of the community” (Dr. Bernard Vavrek, Clarion University, Joint Congressional Hearing 1982).

Librarians, as well as non-librarians, have written about the need for libraries to readjust their methods and views to incorporate changing technologies. It has been stated that both librarians and society as a whole “want to perceive the library as an information center” (Vavrek 1990). Discussion of the National Information Infrastructure emphasizes the danger of creating classes of information “haves” and “have nots.” Many people in government and the library field hope to take advantage of the library’s role as “a vehicle for democracy in our society” to bridge that gap (McCormick 1994). Given sufficient governmental support and funding, “public libraries can provide access to the masses of information for society’s have-nots at costs they can afford” (Goddard 1994).

Several state governments have started putting this philosophy into practice. The initial plan for the North Carolina Information Highway, a statewide fiberoptic network, specifically designated libraries as public access sites (Rogers 1994). New York undertook a special pilot project involving connecting rural libraries to the Internet, based on the concept that “if rural librarians were given the tools and training to use networked electronic information, they could do so effectively and thereby improve the quality of service they offered their patrons” (McClure, Babcock and Nelson 1994). The project was rated an overall success as information resources were greatly expanded, local communities started viewing the library as a “vital information center,” and less patrons needed to be referred to larger libraries.

A study done by Polly Mumma in 1990, demonstrated that “most rural libraries do not generally have the same technological advances at their disposal as their urban counterpoints” (Mumma 1991). In 1993, Bernard Vavrek found that 48% of rural populations would like their libraries to provide computerized information, yet only 6% of the libraries actually did (Vavrek 1993). A study of rural Nebraska libraries in 1993 made no mention of computer technology as being available in any of the surveyed libraries (Cox 1993). And yet, a study done in 1989 indicates that rural residents are no less likely to accept and use computer technology than their urban counterparts (La Rose Mettler 1989).

Access can refer to helping patrons find citations and locate information, or having physical access to a building (including ADA concerns), or delivering physical information containers such as books and documents (McCann 1994). While there needs to be a balance between collections (the physical materials on hand) and access (the ability to locate physical materials housed somewhere else), this study is primarily concerned with expanding the information access ability of the rural library. Limited funding will always restrict the amount of materials on hand, but by providing the means by which citizens find out what other information is available, where it is located, and how they can get it, libraries allow users to overcome collection limitations. This is the significance of a "virtual" library; not a library without walls, which implies no need for a physical building, but a library beyond walls that can reach out to a larger clientele, or bring the world of information into any library (Crawford 1994).

Acquisition of the electronic resources that expand information access can be a complicated and frustrating experience, especially for those new to these formats. How is a selector to evaluate the product? In 1992, Cheryl LaGuardia and Stella Bentley looked at the need to expand collection development policies to include electronic databases. They suggested that set criteria should be established to address content, relevance, usefulness, cost, and accessibility. To judge the content of a database, selectors with subject expertise should be involved, armed with database reviews and a set of technology-based criteria that include "site-specific technological requirements and media-specific evaluative measures" (LaGuardia 1992). An Iowa State University study that same year compared electronic periodical indexes offered by three different companies. The evaluation criteria they used was from Katz's *Introduction to Reference Work*: scope, duplications and gaps, depth of indexing, timeliness, format, and subject headings. The assigned task force selected databases that "in general" fulfilled the research needs of undergraduate students, and found that each product had strengths and weaknesses, so that no one vendor would alone meet all of their needs (Fry 1994). This conclusion has since been echoed by Carol Tenopir: "no one medium or set of sources can satisfy all requests or all users" (Tenopir 1995). The *Guide to Selecting and Acquiring CD-ROMs, Software, and Other Electronic Publications* lists specific policy, service, technical, and cost considerations that should be addressed by an electronic format selection criteria. The authors consider user needs as a "prime consideration," and suggest defining local needs by subject areas needing specific products in electronic format, and staff groups that will benefit from these products, the ease of

use and depth of information appropriate for the intended groups, comparison of the intended products with other electronic or print products, and location issues (Bosch 1994). As stated by Chris Armstrong in an address to the Scottish Library Association in 1994, the need to evaluate databases is "inescapable"; yet currently "users have no fixed criteria by which to judge, and suppliers have no standards by which they can measure" (Armstrong 1994). The Library Association in the United Kingdom has set up a Centre for Information Quality Management for its members to report database problems. The Centre will forward the problem on to the appropriate body (information provider, online host, etc.) and route responses back to the user. By serving as a clearinghouse, they hope to gather statistics and "anecdotal evidence" to demonstrate the need for quality maintenance by database providers. Their long-term goal is to create "a series of measurements by which databases can be assessed" (Armstrong 1994). All of these efforts help towards establishing general criteria for evaluating electronic resources. But what about the question of which databases are best suited to the needs of a specific clientele?

Most recent to the conclusion of this study, Mick O'Leary of ONLINE Magazine looked at this problem. His approach was to create an Advisory Board of eight online subject experts to help select the one hundred "most significant online databases in every branch of human knowledge and endeavor," resulting in the book *The ONLINE 100: ONLINE Magazine's Field Guide to the 100 Most Important Online Databases* (O'Leary 1995). O'Leary concedes that some subjects are better represented in the book than others, reflecting the emphasis they receive from online users who tend to favor business and science-technical information. Preference was given to source versus bibliographic databases, and full-text or abstract versus citation only, in the view that "[a]n online database should be an end in itself, rather than one step in a laborious process" (O'Leary 1995). In this most database users would likely agree, although in some cases a citation might be preferable to no information at all. Most of the databases O'Leary selected are available on mainstream online services, both professional and consumer oriented. The databases in *The ONLINE 100* are grouped into ten broad subject categories and each is described by content, search points, what not to use the database for, unexpected or generally unknown facts, and key facts such as type of database (bibliographic, fulltext, etc.), span of coverage, producer, and how to access the database (online hosts, Internet, CD-ROM, costs). In reviewing the one hundred databases chosen, only one database used for this current study, Biography Master Index, was not included, although the GPO

Publications Monthly Catalog received only an honorable mention. Had The ONLINE 100 been available prior to the onset of this study, it may have proved a good source for the selection of the databases.

Summary and How Current Study Relates

The literature indicates that technology is an important concern and that libraries should be access points for rural patrons. How then are rural libraries to provide the necessary access for their users? Telecommunication technologies could be used to equalize access to electronic resources, with libraries as the logical intermediaries between the technology and the rural user (Senkevitch 1994). Although the limited funds available in rural libraries is seen as a prohibition against developing electronic access, it is also one of the primary reasons for doing so: if you can only afford a limited amount of materials, you can augment that by providing access to information outside of your own collection. To do that, however, you need to know which set of databases will answer the largest portion of the questions you are likely to receive in your library.

Up until the publication of O'Leary's study, no one had undertaken to compose a single list of recommended databases. Reviews of electronic databases were scattered and tended to focus on ease of use or depth of coverage. Research done at the onset of this project revealed no previous studies on the ability of databases to answer real questions. Certainly the issue of appropriateness for rural library populations has never fully been addressed. As stated by Ameritech vice-president Greg Brown, libraries need to identify the applications that most benefit their patrons (Brown 1995). This study should begin the process of filling in this gap in librarian's knowledge of electronic databases. In the increasing glut of information resources, it is time for availability to give ground to effectiveness.

III. METHODOLOGY

Research Design

This study used the expert opinion contained in William Katz's Introduction to Reference Work, Volume I, 6th Edition, to compile a list of recommended electronic databases. This work is frequently used as a text in Library and Information Science graduate-level courses and is widely recognized in the library field. Databases were first chosen based on their applicability to public libraries, then reduced to those also available through the DIALOG Online Service. The chosen databases were, in alphabetical order, ABI/INFORM, Biography Master

Index, Books in Print, ERIC, GPO Publications, Magazine Database, MEDLINE, Newspaper Abstracts, PAIS, and PROMPT (see Appendix A for brief descriptions).

A list of questions from the Arizona State Reference Center served as the representative population of questions. The State Reference Center is a free service provided by the Department of Library, Archives and Public Records (State Library). Public libraries in Arizona can submit questions to the State Reference Center after they have exhausted the sources within their own libraries. Since the State Reference Center does not charge for its services, there is every reason to believe that for the time period of the representative questions, libraries sent in all of the questions they could not answer with materials in their own library, rather than only sending the more difficult questions. A list of actual questions relayed to the Reference Center should, therefore, be a good indicator of the type of questions libraries in Arizona receive from patrons. Many of the contributing libraries were fairly small with limited collections, and the majority of the libraries did not have access to electronic databases at the time they sent in the questions used for the study population, although many have since established access to OCLC's First Search through the efforts of the State Library Extension Division.

A simple randomly selected sample of the Reference Center questions was tested against the selected list of databases. Volunteers from the University of Arizona School of Library Science were each given a list of the sample questions and assigned one of the selected databases to search. Answers were noted on a data collection sheet in the space provided following each question. Questions for which no answer was found were left blank on the data collection sheet. The results were analyzed by number and percent of "hits" per database.

Potential Threats to Validity

It is recognized that this is primarily a descriptive study and it is hoped that this study will be considered a valid exploratory effort in an area where little research work has been done. Maintaining controls such as strict simple randomization of question selection, and searching each question in each database ensured the internal validity of the study. In addition, the quality control check done once the study was completed re-tested a randomly selected group of questions and databases representing 10% of the total question and database combinations. A comparison was done to answers found in the original study to verify the interrater reliability of the initial search results.

Since Arizona is a predominantly rural state, a simple random sample of questions sent to the Arizona State Reference Center should give a fair picture of the kinds of questions asked by patrons in rural Arizona libraries, and therefore make these results useable by Arizona libraries. While the results are likely generalizable to other rural libraries, it is left up to libraries outside of Arizona to make that determination for themselves. Again, this study makes no claims to be more than exploratory in nature.

Study Sample

This study used a simple random sample of questions received by the Arizona State Reference Center. A population of 1045 questions were used for this study; all were received by the State Reference Center between October 1989 and May 1990. Shortly after that time period the State Library began the project to help Arizona public libraries establish online database service through OCLC's First Search. Questions received before the majority of the libraries had any electronic information access was considered more representative of the type of questions asked in Arizona public libraries. These older questions had been stored in a database using different software than was currently being used, causing extraction problems that limited the time period covered and excluded questions from January 1990. The identity of the source library was stripped from the questions before downloading.

A modified Scheffe' technique was used to determine sample size for a level of significance of .05. A random sample of fifty-two questions was determined to be of sufficient size to account for both Type I and Type II statistical errors. The questions had been assigned sequential numbers by the State Reference Center that appeared to be related to the date received. Because of gaps in the numbering sequence, new sequential numbers were assigned to the questions and a computer spreadsheet random number generator function was used to select the question numbers. A data collection sheet was created listing the selected questions and providing space to record the search results (see Appendix B).

Data Collection

Each volunteer searcher was assigned a database and given a data collection sheet of all fifty-two questions. Some of the volunteers searched an entire set of fifty-two questions in a single database, while others searched only a partial list of five to twenty-five questions. The number of questions received was determined by the volunteer, given amount of time he or she expected to contribute to the project.

Divided among the volunteer searchers, each set of fifty-two questions was searched on each of the ten databases; there was no overlap in coverage. Searchers with no previous experience using the DIALOG Online Service were provided with a brief training session. To help level out the varied experience levels, those volunteers with previous DIALOG experience were assigned databases with which they were not familiar. Since the volunteers were all graduate students at the University of Arizona School of Library Science (Library School), access to DIALOG was made available under a previously received Library School grant. Searchers were provided with logins and passwords, were instructed how to access DIALOG from any computer with telnet telecommunications capabilities, and were left on their own to arrange when and where they would conduct the searches. Many made use of the computer lab at the Library School. The bulk of the searches were completed between July 17 and August 3, 1995; some sets of questions were completed shortly thereafter. Out of twenty-six students who volunteered for the study, seventeen completed their assigned searches. The remainder of the searches were completed by the author following the initial study period.

The interrater agreement was for the volunteer to search each given question in the assigned database and record the results on the data collection sheet whenever an answer was found. A citation to a source covering the same subject as that of the question was considered a legitimate answer. It is recognized, however, that a citation and an answer are not necessarily the same thing in cases where a citation has not been specifically requested. Customer dissatisfaction is possible if the desired citation item cannot be obtained by the local library through interlibrary loan or document delivery. For the purposes of this study, however, the broadest definition of information access was used: finding out what information is available, where it is located, and how to get it. Under that definition, citations were considered acceptable.

The searchers were not instructed to record their search strategy, although some did. They were instructed to write the answer on the data collection sheet when they found it, although a few did not, merely marking "yes" or "no". This was still considered valid as the categories of data are mutually exclusive, i.e., the answer was either found in the database or it was not. Since there was no intrinsic order to the categories, only nominal measurement could be used to analyze the data. A spreadsheet was set up to record the results, with columns representing the databases and rows representing the questions. A number "1" was entered into the corresponding cell when an answer was found; a num-

ber "0" was entered was an answer was not found. In this way, total hit rate could be easily tabulated. The hit rate was then divided by the total number of questions to create a percentage.

Reliability of Data Collection Instrument

In order to verify the validity of the data collected, a quality control check was done by two other library science students with greater expertise in DIALOG searching than the original group of volunteers. This was done to determine whether an answer was not found due to searcher error rather than because the answer was not there. A 10% random sample of the total database and question combinations (fifty-two out of five hundred twenty possibilities) was used. The questions and databases were selected through use of a spreadsheet random number generator, then divided between two data collection sheets. The sheets were blindly drawn to give to one of the two quality control searchers. The results of the check generally paralleled that of the original study, although there were a few differences that could be contributed to variations in subject knowledge, or question interpretation, that could be expected from the human element involved in this type of study. Individual searchers bring their own experiences, knowledge, and creativity to a search, resulting in a variety of possible approaches to a question. In only three instances did the quality control searchers find at least partial answers where they had not been found previously; in three other instances, the searchers did not find answers that had previously been found.

One of the limitations to the search procedure, that became increasingly obvious in the quality control check, was the format of the questions themselves. The original questions received by the State Reference Center were entered into the computer in abbreviated form that sometimes left the exact nature of the question unclear. In some cases the spelling of words was incorrect, although it is not known whether due to misspelling in the original questions received by the Data Center or due to typing error. The questions were modified only slightly for consistency of language and form when entered on the data collection sheet. The brevity of the questions allowed for no analysis of original intent, therefore every attempt was made to retain the ambiguity on the data collection sheet so as not to bias the results, excepting the bias of the searcher in creating the search strategy. It is hoped that in an actual library setting, a database searcher would request further reference interviewing to better define the nature of the information sought. Misspellings were also not corrected on the data collection sheet, but were noted with a "[sic]" wherever easily identified. Again,

since the source of the misspelling was not known, and searching of "real" questions was a key to this project, every effort was made to not bias or alter the authenticity of the study.

IV. STUDY RESULTS

Analysis Procedure

The main objective of the analysis was to rank the selected group of databases on their ability to answer the largest number of sample questions. The total number of hits per database were tabulated and a hit rate percentage figured based on the ratio of answers found in each database per the total number of questions in the sample. A list of databases was then created, in order by total hit ratio, indicating total number of hits and percentage of hits per total number of questions (see Appendix C).

Analysis of the Data

At the outset of this study, it was not supposed that any database would emerge as a single source, but rather, it was hoped that a limited group of databases would be determined to be desirable. In general, the total number of hits per database were lower than expected. One database did emerge as having a greater superiority of hits, based on the given criteria of acceptable answers: Books in Print. A full 65.38% of the questions were answered by citations in this database, since titles of books about the same subject as the question were considered to be answers. One database came up with an extremely low number of hits: Biography Master Index. Only 1.92% of the questions found answers or citations in this database. The remaining databases had hit rate percentages of between 13.46% and 32.69%, with three of them at 19.23%. Interestingly, the database with the lowest showing was also the only database not listed in The ONLINE 100. This could be construed as confirming O'Leary's choice in excluding this from the databases that most libraries should consider among their first choices.

Four databases emerged from this study as having a 25% or greater hit rate: the previously mentioned Books in Print (BIP), Magazine Database (MagazineDB), ABI/INFORM, and PAIS. Because of the determination that a citation would be considered a legitimate answer, it was not surprising that BIP had the greatest number of hits at 65.38%: BIP lists all books currently in print, soon to be published, or recently out of print for the entire U.S. book market, without restriction as to subject. MagazineDB emerged with a 32.69% hit ratio, the next highest after BIP. The wide coverage of periodicals in all subject areas could

account for some of this success. ABI/INFORM was next in line with 28.85%, and PAIS came in fourth at 25%. It is interesting to note that business (ABI) and public affairs (PAIS) databases ranked so highly. This may indicate both something about those databases (that they are fairly broad in scope), and something about the sample questions (that a great number of them are related to business and public affairs issues). Both BIP and MagazineDB are more general in nature, as is the database closest below 25%, Newspaper Abstracts. The top four databases seem to be good candidates for answering the type of questions one might expect to be asked in rural public libraries, based on their hit rate. While this study is at most preliminary and exploratory, the emergence of ABI/INFORM and PAIS databases does seem significant.

V. CONCLUSIONS AND SUGGESTIONS FOR FURTHER STUDY

Conclusions

The original research problem was which set of electronic databases would enable rural public libraries to meet 90% of the patron information requests that cannot be answered within the collection. The data collection results were analyzed to determine the smallest set of databases, out of the ten studied, that would provide the greatest total coverage of the representative questions. By looking at the overlap of answers among the four databases with the highest hit rates, forty-six out of fifty-two, or 88.46% of the sample questions could be answered within this set of databases. This does assume that one is willing to accept a citation as an answer, although it could be argued that it is only a partial answer. Material access does play a role in customer satisfaction, although it is not an issue addressed in this study. Additionally, each of these four databases — BIP, MagazineDB, ABI/INFORM, and PAIS — answered at least one question not answered by any other database.

Of the six questions not answered by any of these four databases, five questions were not answered in any of the databases studied. This means that a maximum of 90.38% coverage could be achieved by any grouping of these databases. The one other question not covered by the top four databases was answered in both Biography Master Index and GPO Publications (GPO). Given the overall poor showing of Biography Master Index (1.92%) in comparison to GPO (13.46%), GPO would appear to be a better choice between the two for answering that one additional question. By adding GPO to the other four databases, a 90.38% hit rate can be achieved. No other grouping out of these ten

databases would produce the same hit rate (excepting the previously mentioned Biography Master Index). Given the limitations of this study, the results indicate that of the databases tested, BIP, MagazineDB, ABI/INFORM, PAIS, and GPO could qualify as at least one of the sets of databases that would enable rural public library staff to find sources for 90% of the patron requests for information not found within the library.

Suggestions for Further Study

Electronic databases are one viable option for libraries seeking to expand information access beyond their walls and material collection. When funding is limited, access costs become increasingly important. This study looked at online access through a single provider. The range of DIALOG hourly charges for the selected group of databases necessary to reach a 90% hit ratio is \$35 to \$114 an hour (see Appendix A). Limiting search time helps contain those costs within an affordable range, which then becomes an issue of searcher experience and training. Desired percentage of coverage has to be weighed against what the library can afford. Dropping ABI/INFORM, the most expensive database, from the recommended set would reduce the overall cost while retaining an 88.46% hit ratio, as ABI/INFORM only had one answer that was unique. MagazineDB (\$84 per hour) also only had one unique answer; dropping it from the group would result in an 86.54% coverage rate. It must be remembered, however, that BIP, the database upon which these high hit ratios are based, is a citation-only database, while ABI/INFORM and MagazineDB both include abstracts and some full-text. Material access may become an issue for consideration. Further study could be done to compare costs of various online services, as well as CD-ROM versions, for access to these databases. As more databases become accessible over the Internet, it is possible that costs will decrease.

The main purpose of this study was to test the methodology of evaluating databases by their ability to answer real questions asked in a specific type of library. It is hoped that this will inspire others to adopt similar approaches when examining information resources. Unless librarians start approaching the influx of information resources in terms of practical use, we will not only become overrun with choices, but likely waste funds in the trial-and-error of determining what works and what does not. Further studies like this one are required that deal with different sets of sample questions and different sets of databases. The databases listed in The ONLINE 100, as well as those available on C's First Search, seem good candidates for another study. Above

all, it is time for rural public libraries to make use of technology to expand information access, and it is also time for librarians to start analyzing the appropriateness of available information for the people whom they serve.

Kitti Canepi is currently employed with the Extended Campus Service Libraries of the East Tennessee State University in Kingsport, Tennessee.

APPENDIX A - DATABASE DESCRIPTIONS

Information from William A. Katz's Introduction to Reference Work, Volume 1: Basic Information Sources, 6th ed., NY: McGraw-Hill, 1992. All also appear in DIALOG Database Catalogue, Knight-Ridder Information, Inc., 1995.

1. Books in Print-DIALOG file 470, 1979 to present, includes Subject Guide, Supplement, Forthcoming, Out of Print, Paperbound, Children's with Subject, Scientific & Technical Books, Medical Books, Business & Economic, Religious, \$65 per hr.
2. Magazine Database (Infotrac Magazine Index)-DIALOG file 47, covers 435 periodicals with annotations, includes book reviews, \$84 per hr.
3. ABI/INFORM-DIALOG file 15, international coverage, detailed abstracts, covers 800 titles, including most aspects of business and the economic world, \$114 per hr.
4. PROMPT (Predicasts Overview of Materials and Technologies)- DIALOG file 16, worldwide view of business and individual companies, covers 1200+ titles, \$126 per hr.
5. Newspaper Abstracts-DIALOG file 603, covers 25 newspapers including New York Times, Chicago Tribune, LA Times, Wall St. Journal, detailed abstracts, \$84 per hr.
6. Biography Master Index-DIALOG file 287, includes names from over 700 sources, lists essential facts, \$63 per hr.
7. GPO Publications (U. S. Government Printing Office Catalog)-DIALOG file 166, lists current government publications, \$35 per hr.
8. PAIS International-DIALOG file 49, government, legislation, economics, sociology and political science, covers 1400 journals and 6000 other items, \$75 per hr.
9. ERIC (U. S. Educational Resources Information Center)-DIALOG file 1, index and abstract of reports and other materials on education and related fields, includes library science and social sciences, \$30 per hr.
10. MEDLINE-DIALOG file 155 (1966 - present), 154 (1985 - present), comprehensive medical index, citations with abstracts from 3400 journals in the U. S. and 70 some other countries, includes related fields in social sciences, technology, agriculture, \$36 per hr.

APPENDIX B-STUDY QUESTIONS/DATA COLLECTION SHEET

Study of Electronic Databases on DIALOG
(7/17 - 8/3, University of Arizona)

Name of Database _____

List either the answer or the bibliographic citation of a source which might answer the following questions:

1. What was the Consumer Price Index for Oakland, CA for the following dates: 12/31/87 _____ , 12/31/88 _____ ,

12/31/89 _____

2. A source for the following auto repair manuals:

1977 Ford LTD 425cc _____

1976 Chevrolet Monte Carlo 325cc _____

3. A source for determining the value of a book

4. The value of silver coins minted by the Franklin Mint in 1976

5. General information on 6 engineering companies

6. A source for Stephen King's Wizard and Glass and Wasteland

7. List attorneys in La Puente, CA

8. Information on the care & feeding of a Prarie [sic] Falcon

9. Information on the Department of Defense (history, mission, etc.)

10. The source of a book or information on Myotonic Dystrophy

11. Information on farming and ranching in Alabama

12. Is there an AZ business called "S&H Pipeline Construction"?

13. Who adapted Victor Hugo's Les Miserables into play?

14. Source for a book with pictures of "Ocotilla & 7 Angels" and "Saharo & 3 Angels" by De Grazia _____

15. List the names and addresses of companies that do conversions of large buses to vans for entertainers

16. What Federal Regulation governs nuclear power plant workers?

17. What is the definition of "crystal trylon"? _____

18. A source for copies of Department of Economic Security (DES) programs _____

19. A source for a songbook on artist Emmylou Harris

20. Information on wild muskrats

21. Information on mountain man Pauline Weaver

22. A source for a book on a Globe-Roosevelt, Arizona, country doctor

23. What are the average fees of visiting nurses in Tucson and Phoenix, AZ?

24. Information on a horse race run on March 17, 1957

25. What is the address and phone number of the Gregor Valor Mutual Fund?

26. Albany & Long Island, NY, yellow page listings for MASSEY

27. Information on Scream Therapy

28. Who is the author of the poem that contains the lines "Burn us and we will rise again..."?

29. A source for a book on puberty written for pre-teens

30. What is the poem or saying about an acorn growing into an oak tree, and who wrote it?

31. A source for the Assayer's Handbook

32. What Chinese poet wrote the poem that contains the lines "Oh, Nefarious War! I see why arms..."? _____

33. Information on the history of antique trucks

34. What are the instructions for making a cradleboard for an Indian papoose? _____

35. What is the address and phone number of the Ruby Lamp Company? _____

36. What U.S. Code regulates Collection Agency procedures?

37. What was the value of the Oppenheimer High Yield Mutual Fund on February 15, 1979? _____

38. A source for the book Hannegan Meadow _____

39. Information on the artist Tomie Fusiurto _____

40. Instructions on how to restore books that have been sprayed with fire extinguisher foam _____

41. What is the coat of arms for the Serrano family? _____

42. What is the definition of the phrase "san pa ku"? _____

43. Information on forest fires _____

44. A source for a book on the values of old books _____

45. Information on a wind or windstorm known as "haboob" found in Egypt, India & Arizona _____

46. What are the words to the song "Abraham, Martin & John"? _____

47. Information on building and stocking a pond, including types of fish to stock it with _____

48. Information on artist Aurilio Yammarino _____

49. A source of costume designs for showgirls from the Ziegfel [sic] Follies _____

50. Information on the history of education, along with current qualifications and average earnings

51. Information on the construction of bridges

52. Information on how to make baskets using rags

APPENDIX C- DATABASE RESULTS LIST

Database (in order by hit rate)	Total # of Hits	% of Total Questions
Books in Print	34	65.38%
MagazineDB	17	32.69%
ABI/INFORM	15	28.85%
PAIS	13	25.00%
Newspaper Abstract	12	23.08%
ERIC*	10	19.23%
MEDLINE*	10	19.23%
PROMPT*	10	19.23%
GPO	7	13.46%
Biography Master Index	1	1.92%

* Databases listed alphabetically since hit rates were equal.

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Great American Bookmobile Conference II (1995)

September 22, 1995 9:00 a.m.

Bookmobiles in the Burbs

by Joyce Voss

The "burbs," in this case, are those around the city of Chicago. I will make reference to a number of programs that exist in that geographic location, but most particularly tell you of the Arlington Heights Memorial Library and its Community Services Department which is responsible for Bookmobile service in Arlington Heights, IL. The village is seven miles long and two miles wide, and has a population of about 77,000.

The Community Services Department handles the library's outreach activities. These include, besides the Bookmobile service, a satellite library at Park Place Senior Center, services to the six Senior residences, services to six Health Care facilities, the Library Visitor Program (home-bound), the Blind and Physically Handicapped Program (BPH), School services at all levels, a full time literacy effort, and programming in the community. The work is accomplished by a staff of ten: seven full time staff and three part time staff.

Deposit collections are kept current at five of the Health Care facilities and at the senior residences. Additionally at four of the Health Care facilities, staff make room-to-room visits with materials every other week. Besides offering monthly programs to these sites, we are very proactive in supporting the institutions activities directors with a variety of resources.

The library assists with the National Library Service to the Blind and Physically Handicapped (Talking Books) which is funded by the federal government, and administered in our area through "Voices of Vision," located at the DuPage Library System in Geneva, Illinois. Providing applications, helping with equipment, and offering reader advisory assistance are some of the department's BPH duties.

Through the Library Visitor program patrons who are unable to visit the library have materials delivered to them by volunteers. Community Service staff select materials for these individuals after phone conversations in which their reading, listening, and/or viewing taste is determined. On Monday morning and Thursday afternoon volunteers drop off the selections following a schedule set up by the staff for that day.

At the Park Place Senior Center there is a collection of several thousand items. The library room is available from 9:00 a.m. to 4:00 p.m. Monday through Friday. The Assistant Manager of the Community Services Department is the liaison to the Senior Center. She arranges volunteers to man the library, sets up programs like book discussions, current events, travelogues, health lectures, and other presentations of interest. In recent months there have been National Issues Forums, and an eight week Memoirs Writing course. She also sits on the Board of Directors at the Center.

The Literacy Coordinator is a thirty-two hour per week position, with ten of those hours being paid by grant money. The local High School district seeks the grant from the state, and fortunately the grant has been renewed annually for the past ten years. The Library is a class site three times a week, and the Coordinator sets up study circles in between semesters. There are more English as a Second Language students, but both READ TO LEARN and ESL are presented. A large Adult Basic Reader collection and a number of literacy-related computer programs are also available. Big classes are held in the library's largest meeting room. Students of the formal program plus others whose schedules do not permit class attendance, visit the Literacy Office for one on one consultation with the Coordinator, and for computer instruction.

Schools Services staff provides support to schools in the Arlington Heights area. Those services include loans of Library materials, book-talks, storytimes, classroom visits and library tours. The Elementary School Specialist and the Secondary School Specialist are full time positions. The Preschool Outreach Specialist is a twenty hour per week position. A staff member in the Children's Department handles all preschool visits within the library. The two Preschool positions share the book bag program for this group, and it is available to the twenty-nine preschool sites within the village.

Besides the regular monthly Institutional programming, the Community Services staff provides book discussions, book reviews, and storytelling for adults and/or children. These are available to local groups and organizations.

The AHML Bookmobile has a regular two week schedule in which there are 29 stops at 26 locations. We evaluate our schedule once a year, and put out a new schedule which commences August 1. In years past, other approaches have been taken, but with its current demographics a single schedule seems to serve the most patrons. Regular stops are Monday through Friday from 3:00 p.m. to 7:30 p.m. Our minimum

time at a stop is one hour, and accounts for most stops. A half dozen are one and a half or two hours. Nearby libraries have stops that range from twenty minutes to two hours; most revise schedules twice a year; one puts out schedules three times a year.

Additionally the Bookmobile makes regular visits to a few preschools that have requested them. It's in parades, visits block parties, and may, for number of weeks, visit a Summer school reading practicum, or serve workers at the local race course during the Racing Season.

With one exception, area libraries report that children comprise 50 to 75 percent of their clientele. One community puts their juvenile patrons at 25 percent. Most serve preschools; many take the bookmobile to senior residences; a few are very supportive to the elementary schools; and at least one does not visit elementary schools during school hours.

The AHML Bookmobile nonfiction collection is interfiled and grouped by large subject categories rather than the Dewey decimal system. A color dot system is used. The category approach enables us to shelve by size, making a neater looking bus and an effective use of space. One other area library uses a category approach. This fall we will be conducting a survey to evaluate the category arrangement and foresee reducing/changing/eliminating some groups. For the most part the Bookmobile owns only titles carried by the main library. Bookmobile items are found in the main library catalog, and even though there are general subject categories on the bus, materials are fully cataloged and carry said number on their spines.

We have one terminal on the Bookmobile and anticipate a second. Our main library uses the Innovative system and the bus is linked to it for circulation files and for the online card catalog. Our packet radio comes from Electronic Systems Technology in Kennewick, Washington. An additional aerial is soon to be added in our northern region, and is necessitated by our inability to pull up information at two to four of our stops. We monitor our stops daily and report monthly the percent of activity at each stop. It will be interesting to note if the time of the year or other conditions consistently affect our hook up.

Besides having access to circulation and catalog information on their Bookmobiles, some area libraries carry CD ROM products. Currently these are encyclopedias, an atlas, Family Physician, a visual dictionary, Way Things Work, etc. A number of questions arise when considering products for a vehicle. For example, are time restrictions necessary? If a Bookmobile carries Magazine Index, would this lead to frustration on the users part if the actual magazines could not be immediately avail-

able? Deciding what is appropriate technology for a specific Bookmobile is a real challenge. How do the many types of technology fit into the MISSION of your Bookmobile?

The AHML Bookmobile collection is a POPULAR materials collection. That is our mission. We carry almost all of the same kind of popular materials that the main library does: compact discs, audio cassettes, books on cassette, videos, large print, books, sights and sounds, etc. Our circulation represents about 5% of AHML's total circulation which is near one million. Most area bookmobiles have circulations ranging from five to ten percent.

Of course the staff working on the Bookmobile has to handle many questions from Readers' Advisory to Reference. At AHML everyone in Community Services works on the Bookmobile. There are four drivers. Only the Bookmobile Coordinator's position is exclusively connected with the Bookmobile. The other three drivers have other Community Service duties. The twenty-five hour per week clerk goes out with a driver three times a week and spends the remaining work time on department projects. The Literacy Coordinator accompanies a driver to the Backstretch during racing season, usually May through September. Two stops per week for two hours each and it serves a group of patrons that are 75% Hispanic. The school services personnel are used as needed. We feel that Continuing Education of the staff is very important, especially their readers advisory skills. Each will attend several workshops a year to hone her skills.

The current Bookmobile services in the suburbs go back to the 1950s. Arlington Heights did not begin using a Bookmobile until 1973, and then it was a service especially to children. In interviewing area-wide bookmobile managers in preparation for this talk, a number of similarities and differences emerged. I have mentioned a few. Many talked of the importance of staff in influencing the satisfaction of bookmobile users. A few use the McNaughton or a similar program to help deal with having enough copies of the current titles. A few do not carry videos. Some see the existence of their Bookmobile as a substitute for building branches which are more expensive to maintain. Many use a different summer schedule to test an area before making it a regular stop. Most encourage telephone calls for materials that could then be brought out to a stop. In the suburbs 50 percent or more of the Bookmobile users also regularly use the main library.

During the past year a Bookmobile Managers' group in Northern Illinois, who regularly meet, put together a survey for the purpose of gathering pertinent information. The final writing of the survey and the

compilation of data was done by Noreen Reese of the annual Round-Up in the Spring. Bookmobiles are on display, workshop sessions are offered and speakers are invited to enrich the day.

Although some of our methods and purposes may vary, there is a lot more common ground shared by rural, urban and suburban bookmobiles. We are primarily concerned with our patron. We endeavor to do what we can to bring the best service possible and fill reasonable needs. We offer a smaller universe of materials, which marketing people tell us is very appealing. We are intergenerational, and we offer a certain security. Bookmobiles should have a promising future as long as we remember to define what we are doing, to collect the hard facts that support the need for our service, to maintain a trained and friendly staff, and to focus on our primary concern, the patron.

Joyce Voss is the Manager of Community Services at Arlington Heights Memorial Library in Arlington Heights, Illinois.

Bookmobile Survey

by
Liam Kennedy

FOCUS OF THIS SURVEY

Since so much time has passed since the last survey concerning bookmobile services was conducted by the CSRL, it seemed appropriate that another be conducted in an attempt to shed light on the recent status of bookmobile services in the United States. This survey had a different focus than that of the one conducted in the mid-1980's. Admittedly, it was largely modeled after its predecessor, but sought to measure accurately bookmobile services in the United States. In some ways this survey can be seen as a barometer of bookmobile services as the Twenty-first century approaches.

The focus of this survey was rather broad in nature, seeking a view of services as a whole. Gaining information concerning long-term planning, numbers of patrons served, numbers of books circulated, significant problems, specific materials offered, budgets, service cycles, and staff development was the intent. Additionally, special effort was made to put reference services and the state of automation onboard the bookmobile into perspective. Since the bookmobile is viewed by many to be an extension of the library, it seemed rather important to see how the function of reference personnel is conducted. Also, since the state of automation within libraries has advanced so significantly during the last decade, it seemed necessary to determine how the bookmobile has been effected.

"TECHNIQUE" APPLIED

- To assist the reader in reading the results of this survey the researchers decided to explain the technique and format used in presenting the information.
- All percentages expressed are that of the total number of surveys returned.
- All percentages are expressed in whole numbers. Percentages in the range of x.5-x.9 were rounded up; those in the range of x.1-x.4 were rounded down.
- Numbers in parentheses following percentage figures represent the actual number of those surveyed that responded to that particular question.

THE RAW DATA

Out of nine hundred ninety-six possible addresses for bookmobile programs, two hundred forty-six, or twenty-five percent, were selected. Every fourth address from the list was chosen. To each address was mailed on survey complete with return envelope. Of the two hundred forty-six mailed, ninety were included in this analysis. That is thirty-seven percent of the total surveys mailed. Of the ninety surveys analyzed, sixty-six yielded tangible information. That is, twenty-four surveys provided no answers to any of the survey questions. These twenty-four surveys were of some value, however, identifying many libraries that have ceased offering bookmobile services.

Seventy-two percent (65) of those surveyed responded to Q-1 about whether their library has a long term plan. Twenty-eight percent (25) of survey respondents indicated that they have a long term plan relating to bookmobile services, while forty-four percent (40) indicated that they do not have a long-term plan relating to bookmobile services.

Seven percent (5) plan on replacing or purchasing a new bookmobile. Three percent (2) plan to provide on-line services to their patrons, including access to the "WWWeb", in one case. Seven percent (5) plan on increasing services for the elderly, homebound, and patrons with disabilities, while seven percent (5) have the same plans for services to children.

When asked whether they had ever formally surveyed bookmobile patrons as to what might increase their satisfaction with the bookmobile service thirty-seven percent (33) responded that they have, while thirty-four percent (31) responded that they have not.

No respondents indicated that having more bookmobile staff would increase satisfaction. Three percent (3) of respondents indicated that having longer stops would increase patron satisfaction, while two percent (2) noted that having more frequent stops would likely increase patron satisfaction. Eleven percent (10) included other things that would increase satisfaction. Among the other things noted were having a better selection of "genre", and new locations of stops.

Seventy-one percent (64) of survey respondents indicated that they keep some measure of statistics on bookmobile services. Every respondent to this question indicated that they keep circulation statistics. Forty-two percent (38) indicated they count the users that come onboard the bookmobile. Thirty-three percent (30) indicated they keep statistics on those attending programs. Twenty-eight percent (25) of respondents keep statistics on reference questions asked onboard. And 16 percent

(14) indicated other areas of statistical measure. Among the other things upon which statistics are kept were the use of magazines and paperbacks, and the amount of time spent at each stop.

When asked whether fixed facilities in appropriate locations would be satisfactory alternatives to bookmobile service, seventy-two percent (65) of the respondents answered. Eleven percent (10) indicated that they thought fixed facilities would be a satisfactory alternative. Twelve percent (11) indicated that they were not certain whether fixed facilities would be satisfactory, and forty-nine percent (44) indicated 'no', fixed facilities would not be satisfactory. In almost every case, the reason cited for fixed facilities not being a satisfactory alternative was that those served by the bookmobile cannot reach the facility. Others sited the inherent cost in operating and maintaining a fixed facility.

When asked how bookmobile services will change for their patrons over the next five years, seventy-one percent (64) of survey respondents answered. Thirty-four percent (31) indicated that services would increase. Seven percent (5) cited their plans to automate the bookmobile and the resulting increase in services as a significant factor in the increase in services to patrons. Eight percent (6) identified population growth in their service area as a factor affecting an increase in services. Four percent (3) noted that the bookmobile itself will be a major factor in the increase in services, either because a new bookmobile is going to be purchased, or the existing bookmobile is operable once again.

Sixteen percent (14) indicated that services will decrease. Financial constraints were often identified as the reason for the projected decrease in services. Other notable factors included decreasing populations, more stops that last longer, more women entering the work force, and the increased mobility of patrons.

Twenty-one percent (17) indicated that services will remain the same. Seven percent (5) identified no increases in the budget as the reason for "stagnant" services. Three percent (2) noted that their schedules were already filled to capacity. There is no time for expansion.

BACKGROUND INFORMATION

Patronage of bookmobile operations during the period spanning 1994 and 1995 was the focus of Q-10. Forty percent (36) reported patron numbers for 1994. The average number of patrons that came onboard the bookmobile in 1994 was 11,240. Forty-four percent (40) reported patron numbers for 1995 with the average being 11,535 patrons.

Circulation statistics for 1994 and 1995 were reported in Q-11. Sixty-eight percent (61) provided figures for 1994. The average number of books circulated in 1994 was 41,100. Seventy percent (63) provided figures for 1995. The average number of books circulated in 1995 was 41,863.

Sixty-nine percent (62) of survey respondents provided information about the most significant problem they face in providing bookmobile services. Eight percent (7) indicated that the lack of staff was the problem. Twenty-two percent (20) noted that a general lack of operating funds was troublesome. Five percent (4) stated that the inability to carry enough books on the bookmobile was problematic. Twenty-three percent (21) cited mechanical upkeep of the vehicle as the major obstacle. Sixteen percent (14) noted other problems as being most significant. Among the other problems faced were, in no particular order, weather related problems, not actually having a bookmobile, overdue/lost materials, "time", lack of patrons, no back-up personnel, inability to access the database, and the "lack of public internet".

Seventy-one percent (64) of survey respondents provided information as to whether their bookmobile budget was separate from the overall budget of their library. Twenty percent (18) reported that their budgets are separate from the budget of the library. Fifty-one (46) percent reported that their bookmobile budget is not separate. Seventeen percent (15) provided figures for the 1994 budget. The average 1994 bookmobile budget was \$70,822. Twenty percent (18) provided figures for the 1995 budget, with an average of \$70,070.

MATERIALS AND SERVICES OF THE BOOKMOBILE ITSELF

Seventy-one percent (64) of the surveys received answered our query as to whether enough reference questions were asked to warrant carrying reference sources on the bookmobile. Twenty percent (18) responded yes, while fifty-one (46) percent responded no, they do not receive enough questions to warrant carrying reference sources.

Twenty-four percent (22) of respondents identified the general type of reference sources they carry. Twenty-two (20) carry dictionaries. Seventeen percent (15) carry encyclopedias of some sort. Seventeen percent (15) carry atlases. Four percent (4) responded that indexes are offered. Twenty-one percent (19) noted carrying almanacs. And nine percent (8) cited some other type of source. A singularly notable "other" source was a cellular phone for calling in reference questions to HQ.

 Respondants were also asked to identify any non-book materials car-

ried on the bookmobile. Forty-seven percent (42) indicated that they carried books on tape. Twenty-six percent (23) indicated that they carried video tapes. Three percent (3) noted that they carried maps on the bookmobile. One percent (1) offered some other form of electronic media. Seventeen percent (15) cited carrying some other form(s) of non-book materials. Common forms of other non-book material included cassettes, compact disks and magazines.

Seventy-one percent (64) of the surveys received provided information concerning services for the physically challenged. Eight percent (7) reported that their bookmobile is equipped to handle physically challenged patrons. Sixty-three percent (57) reported that their bookmobile is not equipped to handle physically challenged patrons.

Sixty-seven percent (60) reported that they do carry materials appropriate for the visually impaired. Six percent (5) indicate that they carry books in Braille. Sixty-seven percent (60) carry large-type-books. Thirty-four percent (31) carry talking books. Nine percent (8) carry "other" types of material for the visually impaired. Included among the other material types were magnifiers, toys and puzzles, and books-on-tape. One librarian reported that they did not carry materials for the visually impaired because their service area has in place a program by the Philadelphia Library for the Blind. Only four percent (4) reported that they do not carry any materials appropriate for the visually impaired.

AUTOMATED SERVICES ONBOARD THE BOOKMOBILE

Seventy-one percent (64) of surveys received responded to our query concerning automated services onboard the bookmobile. Thirty-eight percent (34) indicated that they have a microcomputer onboard for charging out materials.

Nineteen percent (17) indicated that their automation systems have been in use for two years or less. Fourteen percent (13) indicated three to five years. Three percent (3) indicated six to eight years. And four percent (4) reported that their systems have been in use for nine or more years.

Among the different brand systems in use were Dynix-Telxon, Gaylord-Galaxy, Geac, DEC, Pick, Biblofile, Brodart, and Library Corp.

Thirty-three percent (30) reported that they do not have a microcomputer onboard for charging out materials.

BOOKMOBILE STOPS

Seventy-three percent (66) of surveys received provided information on the number of stops served by the bookmobile. Each bookmobile averaged 48 stops. Three weeks was the average service cycle for each bookmobile. And fifty-two service hours per service cycle was the average for each bookmobile.

Twelve percent (11) of survey respondents indicated that available population was the most important factor in determining the location of a stop. Four percent (4) indicated they base stops on the location of suitable buildings. Four percent (4) reported that the stop is determined by its distance from the library. Fifty-nine percent (53) indicated that it is based on the need and location of users. Four percent (4) reported "other" factors as being the most important factor in determining the location of a stop.

Eight percent (7) indicated that the most important factor in determining whether a stop should be continued is the available population of the area in question. Forty-seven percent (42) reported that the decision is based on circulation statistics. Two percent (2) indicated that the decision is determined through a community survey. One percent (1) stated that the decision is primarily financial in nature. Nine percent (8) provided "other" important factors. Other important factors included the needs of schools, the needs of users, attendance and circulation. Often the miscellaneous category of other overlapped the categories provided.

Forty-eight percent (43) identified demand as the most important factor in determining new stops. Thirteen percent (12) noted that new stops are based on available population. Two percent (2) reported that new stops are determined through a community survey. Three percent (3) reported that it is primarily a financial decision.

Forty percent (36) of survey respondents indicated that the character of their stops has changed over the last five years. Twenty-nine percent (26) reported that the character has not changed over the last five years.

STAFF DEVELOPMENT ACTIVITIES

Sixty-two percent (56) of survey respondents indicated that staff development opportunities are available. Ten percent (9) reported that staff development opportunities are not available.

Sixty percent (54) of survey respondents indicated that they do take advantage of staff development opportunities. Three percent (3) indicated that they do not take advantage of staff opportunities. Two per-

cent (2) indicated that they participate in staff development on a weekly basis. Nine percent (8) participates monthly. Twenty-six percent (23) participates annually. Twenty-three percent (21) reported "other" information. Other information included as available, 2/year, 2-3/year, 3-4/year, and quarterly.

POPULATION SERVED BY BOOKMOBILES

Sixty-nine percent (62) of surveys received provided information concerning the population of the total service area served by their bookmobiles. The average population of bookmobile service areas was 108,629. Note, however, that the range of populations reported is 992,00. A Detroit, MI area library reported a service population of 1,000,000.

CONCLUSIONS

The data gathered from this survey presents some evidence regarding certain trends in bookmobile services.

Perhaps not surprising to anyone reading this, evidence indicates that the main constraint put on bookmobile services, according to the operators, is the lack of sufficient funding. In this way bookmobile services are no different from fixed facility services. But the effect of insufficient funds can be amplified when the services in question are that of the bookmobile. For many, particularly the elderly, house bound, children in day care, and in some cases schools, the bookmobile is the only link to the library available. In this case the contracting of budgets, or the "stagnation" of budgets when the cost of living increase is factored in, can mean the cessation of services all together. Whereas, with fixed facilities the services within the building may decrease, but are still available to all that can reach the library.

Since the vast majority of libraries are institutions of a public nature, that is they receive some level of public funding, it is imperative that they examine how well they serve all of their supporters. As noted previously, for many, through no doing of their own, the bookmobile is the only service they receive. Should they be denied service all together when service continues for those more "fortunate"? What, then, is the duty and purpose of the public library?

Traditionally reference services have been a segment of library service carried out by people for people. Herein lies the dilemma for bookmobile services. With staff already taxed to a great degree, how can there be any time left over for answering questions commonly

posed by patrons? In truth, the author suspects that a sizable portion of bookmobile operators serve as a reference librarian of sort. Evidence collected by the survey do not corroborate this view, however.

Survey evidence suggests that the majority of bookmobile librarians do not receive enough reference questions to warrant carrying reference sources. Among the sources that are available on bookmobiles that carry reference sources are primarily dictionaries, encyclopedias, almanacs, and atlases. Many survey respondents indicated that these items circulate with the rest of the collection.

Perhaps bookmobile librarians simply do not receive as many reference questions as suggested. This would seem to indicate that the bookmobile is viewed as a source of books and information, but not necessarily in the same way as the traditional fixed facility. More than likely, though, the evidence supports the notion that bookmobile librarians are too busy circulating books to answer questions.

Much to the surprise of the author the percentage of bookmobiles that are equipped to handle physically challenged patrons was a mere five percent. Given the fact that bookmobiles serve such a wealth of seniors and disabled people this is surprising, but upon further examination the situation reveals itself. First, many people served by bookmobiles are physically unable to leave their residences to board the vehicle so it makes no difference whether the vehicle is accessible to them. Secondly, many bookmobiles operate from vehicles manufactured and purchased prior to the passage of the Americans with Disabilities Act into law. Many vehicle manufacturers did not offer these amenities to their clients. Third, but certainly not the least important, is the dedication to service that most all bookmobile librarians evidenced in this survey. Being accessible to the physically handicapped does not matter as much when you have personnel willing to bring the books to your door.

There is no information available from the past to which to compare the state of automation onboard bookmobiles today; however, the evidence collected supports some obvious trends. One in five survey respondents report having had an automated circulation system for two years or less. All told over thirty percent of the respondents have had an automated circulation system for five years or less, while just seven percent have had one six years or more. Indeed, it seems automation is finally reaching the world of bookmobile services as well. It has taken longer than for main libraries, but perhaps that is to be expected given priority bookmobile services receive. Clearly the trend is on the

rise, and before long automation onboard the bookmobile will be the standard rather than the exception.

To the extent that this survey is credible, it suggests an interesting, although not surprising situation for bookmobiles nationwide. The statistics gathered suggest that more patrons were served during the 1995 service year than during the 1994 service year, while at the same time the budgets of those bookmobiles decreased. The number of patrons served increased by just over five percent, but budgets contracted over eight percent. This figure is somewhat tempered by the fact that the number of books circulated during this same period decreased by over forty-percent. Still the trend is toward bookmobiles offering what they have to a greater number of people on less money.

While this may come as no surprise to anyone associated with bookmobiles and/or libraries, it still raises the critical question of the role of bookmobiles and, to a larger degree, libraries. The services provided by bookmobiles seems largely invaluable to the recipients. In fact, for many it is an either-or situation. Either they are served by the bookmobile, or they are not served. Is this something that a "public" institution should allow? Furthermore, what does this say about the value of those who will go unserved if the bookmobile falls short? This is not intended to serve as an indictment of the bookmobile, rather it is directed at those that take the 'public' library and its various extensions for granted.

Whatever the outcome of the various dilemmas identified earlier, if they are even resolved, one thing is certain. The success of bookmobiles thus far in their history, and their continued success in the face of difficulty, should be attributed to those that make it all possible—the operators and librarians themselves. It is they who fight the battle daily; it is they who keep the vehicle running; it is they who deliver to those who cannot leave their residence; and it is they to whom the real credit belongs.

PROBLEMS ENCOUNTERED

To the surprise of the author, despite all efforts to ensure that questions not be vague or misleading, or allow for more than one interpretation, there appeared to be several areas of the survey questionnaire itself that ostensibly could be improved upon.

One difficulty not anticipated was that of actually getting those responding to follow directions. It sounds pompous for a beggar of information to say this, but it is not intended that way in the least. If a

question is asked and one answer, the most important factor for instance, is wanted, then one answer is all that is expected. Rather, it should be stated, was expected.

The question dealing with materials for the visually challenged led to some difficulty in interpreting results. One choice offered as an answer was Talking books. Many respondents indicated "other—books on tape". This confusion is, in large part, due to an error on the part of the author. At this time he is no longer sure what the difference between Talking books and Books on Tape is, if there is any.

Terminology appears to have played a role in the ambiguous nature of many of the answers concerning library automation. Microcomputer was believed to have been a term that all readers would understand. Clearly it is not yet a word of the realm. Several respondents noted that they did not have microcomputers onboard the bookmobile, but then stated that they would download information when they returned to the library, or identified having had an automated circulation system onboard the bookmobile for some period of time. Clearly one must be very careful about diction when constructing a survey.

In retrospect, when asking respondents to note how often they participate in staff development opportunities, it may be better to simply allow them to fill in the frequency. The variety of answers given under "other" could have easily been placed in any of the categories provided. As a result, the outcome from this section of the survey is likely skewed to a small degree. It seems in an effort to simplify, the process was actually made more complex and ambiguous.

Should another survey be conducted wherein it is asked that the respondent provide information concerning service cycles, and number of stops per service cycle, I recommend that each of these terms be briefly, but completely defined within the survey. Some of the answers encountered lead the author to believe that the intent of those questions was not clear.

On the whole, however, despite the preceding gripes the process went smoothly and was very rewarding. It has provided the author, and hopefully others, with valuable information, and experience in conducting a survey. Provided the results in hand are satisfactory, the opportunity to conduct surveys in the future would be welcomed.

John Kennedy is a Research Associate at the Center for the Study of Rural
Partnership of Clarion University of Pennsylvania.

Connections: Internet In Rural Pennsylvania Libraries

by Kathryn Saupp

Today is the eleventh hour for speculation on the installation of the Internet in Pennsylvania's small rural libraries. Even as this paper was being composed, huge unmarked boxes were unpacked at 188 libraries all across the state as part of the Online at PA Libraries project. Each shipment contains: an IBM PC350 P133 1.6G/16EDO (CPU); a 14" G40 Color Display Monitor; a 28.8/14.4 ISA Data/Fax Internal Modem; an IBM Multimedia Kit University Education; Hewlett-Packard 680C 2 Pen Color Printer; and Hewlett-Packard 3M IEEE-1284 A-B Par Cable. Each shipment implies an unspoken promise that the status quo of information resources in each of those libraries will never be the same again. Ready or not, rural Pennsylvania libraries are now fully equipped to offer Internet to their patrons.

Pessimistic library managers may view this delivery as the one that will slit their throats once and for all by heralding the end of the library as we know it. Those who are more optimistic may liken it to an opportunity comparable to the famous share lesson of Bert and Ernie on *Sesame Street* where Bert cuts the piece of pie into two pieces so each can have a piece. Bert cuts and Ernie gets to pick the first piece. That way, if the pieces are cut unevenly, the other person has the first option to pick the larger piece; and fair play is built into the procedure of divvying up the goods. What kind of metaphorical pie is it?

On September 30, 1996, the Library Services and Technology Act (LSTA) authorized \$150 million in federal funding for fiscal year 1997 and each subsequent year through 2002. Ninety one and a half percent of this will be allocated to state library agencies "for statewide services, subgrants for technological innovation or electronic linkage purposes, and for outreach services."¹ The allotment averages about \$2.75 million per state, before any private industry grants. In May 1996, Bell Atlantic awarded a \$750,000 grant to the Pennsylvania Department of Education Commonwealth Libraries for local libraries to provide public access to the Internet. Couple this with the Telecommunications Act's promise that libraries "have access to advanced telecommunication services at rates less than the amounts for similar services charged to other parties,"² and we are talking about a piece of budgetary pie much bigger than any shared by libraries since the booming library development of the fifties and sixties. So when the computers arrive, the first question

professional librarians should ask is not just "How do I hook the darn thing up?" but also "Why here and why now?"

What the congressional acts and the Bell Atlantic award are attempting to subsidize involves the two greatest challenges facing all rural librarians attempting to provide Internet access: hardware and communications costs. These are also two of the biggest excuses offered for not providing the Internet to patrons. Now the responsibility for providing this service rests squarely on each library manager in Pennsylvania who participates in the Online program.

The hardware has been provided to each library through a standard grant application and information form, and used 1994 census estimates to identify rural counties and municipalities. No doubt this made it possible for the state to negotiate an order for a number of personal computer systems at a sizable discount from the vendors by using a blanket order similar to those that could be used for other expensive reference materials. The order for 188 computers at a claimed value of \$2,770 per computer is a sizable order, totalling approximately \$521 thousand. Yet this reflects just the tip of the telecommunications budgetary iceberg emerging from the bi-partisan acts and commercial grants focusing on connecting libraries, schools, and health networks to the Internet.

The current legislation politicians, big business, and utility companies are banking on the fact that fascination with the Internet now affects a majority of the nation's population, and that it could be an effective learning tool for developing nationwide computer literacy in order to compete on a global level. What does the public think? In a recent Knight-Ridder poll of 1,002 adults which asked what was one thing they would do if they had their lives to live again; 67% answered that they would learn computers — second only in choice to saving more money.³

Library managers that filled out the grant applications are banking on immediate access to more information via the Internet than they could have ever hoped to provide otherwise. They are also hoping for renewed interest in their library facilities that will come from providing the increasingly popular Internet. The pie, then, has a distinctly universal flavor, seasoned with a pinch of democratic principle. "In the best-case scenario, rural libraries may help catalyze other groups to join in and fund a direct connection for the good of the whole community."⁴

Whether it's called universal service as the politicians prefer, or universal access as librarians prefer; the crux of the political ideal is "a

growing fear that the emerging computer network will be shaped to accommodate business goals at the expense of the public's welfare."⁵ Digital information is a pay-per-use commodity not unlike books, magazines, and newspapers; and the traditional role of librarians has been to ensure that as much information as possible is available to as many people as possible. What makes public libraries an American institution is that they provide this to people for free. In a recent interview attempting to examine the goals of the Telecomm Act, Andrew Blau, Director of the Benton Foundation's Communications Policy Project in Washington, said librarians "understand the importance of community based institutions as public points of access, and they also understand the consequences of people not having access." He stresses that this "should be the basis for making rules about who pays in, who will be supported, and how to ensure that certain telecomm services will be universally available."

The pie is a big money pie of federally allocated funds, and the state agencies are like Bert, cutting not just two pieces — but enough that everyone gets his or her fair share. Yet the decision to connect as many U.S. citizens as possible to the Internet under the democratic principle of equity has not been an impulsive decision nor a new approach to government spending. Even the term "universal service" is not new, it was used by politicians at the turn of the century to justify subsidizing telephone and telegraph companies so that rural America could share in the benefits of having these utilities available like their urban cousins did. The subsidies allowed government to adjust the costs of providing services over greater distances to more sparsely populated rural areas. A discussion of this political can of worms and all that it implies through history and innuendo is beyond the scope of this or any discussion focusing on rural libraries alone. Suffice it to say that the label on the can warns "monopoly" as boldly as it reads "regulatory framework."

For public libraries the LSTA \$150 million amount is oddly reminiscent of ALA's 1993 proposed estimate to provide the Internet to the nation's 15,000 main and branch public libraries and clearly an underestimate of today's costs:

PC with 9600-baud modem @\$2,000	\$ 75.25 million
Software	30.00
Dial-up access (1 year)	37.50
Salaries and consultant fees	3.25
Training	4.50
	<hr/>
	\$ 150.50 million ⁶

Viewed from the perspective of these four-year-old figures, the pie is already too small. Unfortunately, budgets that are too tight for meeting the increasingly complex demands of patrons have become a tradition in most public libraries, particularly small rural libraries because of their funding structure. Librarians have been wrestling with the issue of balancing budgetary constraints and equitable access to non-electronic information for generations.

The ALA's Library Bill of Rights states that public libraries provide materials and information presenting all points of view to all people. These ideals are echoed by Blau when he says that by extending their vigilance to the digital information society, librarians will insure that the telecommunications industry serves the public interest. On the day President Clinton signed the Telecomm Act in the Library of Congress, Dr. Billington, the Librarian of Congress (who, incidently, does not have an MLS degree) said, "America's free libraries keep democracy dynamic by using new means to give more people more access to the ever expanding body of human knowledge."⁷ Thus these are the ingredients of which our metaphorical pie is made, and the federal government was the baker. The sugar is as bittersweet as the U.S. gold standard and the grants offered by big businesses involved in the telecommunications industry can make it.

Regardless of amounts, under the Telecommunications Act 91.5% of this pie is going to the state library agencies all across the country, who like Bert, will cut the pieces. The federal government's goal with the act is to provide a regulatory framework on which to base decisions. Clearly, if public libraries don't do it, they will find the institutions that will. In other words, the federal government is not only acting in the public interest, it is also providing the means for documenting it. Libraries, schools, and health care will be the testing ground. The FCC will use this documentation as the basis for devising a new formula for subsidizing utility rates for universal information service providers just as it did for long distance phone and telegraph service to rural communities in the past. The numbers that will be plugged into that formula will be determined by each state. No doubt, this could be an effort by the federal government to avoid blame for any mistakes that may be likened to past programs by giving each state increased responsibility in current regulatory decisions.

"The law says libraries will be paying less for telecomm services but doesn't say how much less."⁸ One need only watch the television commercials for Sprint, MCI, and AT&T to know how involved setting such

es can be. To make matters worse many smaller companies like

GTE, a major Pennsylvania company, doesn't even advertise, leaving political novices such as rural library managers little room for speculation based on research alone. Overall, the belief seems to be that key questions about the local rates charged for universal information service will be addressed at the state levels.

Historically, the stage is set to look like libraries are receiving huge amounts of money to provide these services; when, in light of the costs involved, they are not. The problems don't end there. The plan to install the Internet using the Bell Atlantic grant has already revealed an even larger problem with the tax base used for funding rural public libraries. This is made most apparent by looking at the project's definition of what is actually a rural library.

The application for Online at PA Libraries as previously stated, used the 1994 census for defining a rural municipality. That is, rural was determined as having 50.1 - 100 people per square mile. Urban was set at having 2000.1 - 4000 people per square mile. The author of this paper lives in rural Pennsylvania, and the communities consist of clustered communities. The name of each of these clusters is spoken by the local residents but most will not be used in census records because they don't have post offices, different zip codes, or even state road signs to identify them. For example, one town called Osceola Mills is a cluster of little communities like Nob Hill, Slabtown, Spike Island and several others that the author's mother can name, but even the author doesn't know. For census purposes each of these clusters is recorded as Osceola Mills, giving it a population of about 1,310 people.

However, for local municipal tax purposes these clustered communities fall under township regulation; the town of Osceola under this latter definition of municipality is only three-tenths of a square mile in size. When the branch manager at Osceola Library calculated the size of her community under the guidelines of the chart on the grant application, her community came out as very urban! This same disproportional relationship also exists when determining the tax levies for funding rural libraries, so that quite often though those in the surrounding communities use the libraries, only those locally determined as a part of the municipality pay taxes for funding the libraries.

The most recent survey statistics from the U.S. National Commission on Libraries and Information Science (NCLIS) indicate that another trend is to install Internet access to central libraries, but not to branches. Small branches of county libraries in Pennsylvania, such as Osceola which is a branch of the Clearfield County Library Federation, are

receiving computers. Note that generally a rural community in Pennsylvania is defined as having a population from under 2,500 to 25,000 people. The parameters of the survey chooses a cut-off point of 5,000 nationwide as the smallest community. Consequently the legal service populations of some of Pennsylvania's rural libraries is small — too small for accurate population statistics to be available. Though these libraries function as a main library for the town, they are actually branch libraries under the county system. Again, the definition set by the government for these rural libraries blurs.

This problem becomes compounded when reviewing NCLIS's latest letter and report to President Clinton that emphasized that "Public libraries in communities under 5,000 are significantly (59%) less likely to use the Internet than those serving populations from 100,000 to 1 million+."⁹ Also, most of the libraries that had already installed the Internet had it only in the main libraries and not in the branch libraries. In urban communities branch libraries can use remote dial-in access to the main library, but in rural Pennsylvania such a tie-in usually means long distance charges, and sometimes even a different phone company even though the branches are closer together in actual driving time.

On the other hand, if Pennsylvania had not chosen to provide computers to smaller county library branches serving well under the 5,000 cut-off point, the state would have looked like it was lagging behind the rest of the nation in its construction of the information highway in terms of the proportion of public libraries per municipality in the state equipped to offer the Internet even though the branch libraries have far fewer than 5,000 in their legal service area. Now that the computers have already been delivered, only time will tell how these libraries will effect the results of the next survey. Viewed as a future part of the current survey results Pennsylvania branch managers already have several strikes against them in anticipating the success of Internet at their facilities. Pennsylvania rural library managers already have their piece of the pie, though, so they must try to make the best of the opportunity.

According to NCLIS "the top three most important benefits of connecting to the Internet"¹⁰ for libraries are: 1) Access to Internet-based electronic information; 2) To allow the librarians and the public to communicate with other professionals; and 3) To enhance reference service capabilities of the library.

The first benefit, access to Internet-based information, more or less means the library will allow an opportunity for the public to surf the net for free. Internet cannot be hooked-up like a CD-ROM database or

Nintendo, because no one owns or houses the Internet. First, the manager must find an Internet Provider for his or her area. Adding another branch of another county library to the study — Holt Memorial Library in Philipsburg, a branch of Centre County Libraries — will help to illustrate some of the problems faced by managers when selecting a service provider these days. Holt Memorial, slightly smaller than Osceola Library, is a close neighbor sitting just nine miles down the road from Osceola. The two communities, similar in size and population have been rivals for as long as the county line which separates them has existed. The rivalry has diminished only slightly with the newest generation which attends the same high school, Philipsburg-Osceola Area, a jointure built in the prosperous sixties. Both libraries use the same online catalog which is CD-ROM based and provided by the district which overlaps the two counties.

Neither will have to pay long distance telephone charges to use service providers. In fact, of the 30 libraries in this area who received computers, only one will have to pay long distance telecommunications charges. Holt Memorial will most likely use the same provider that services the local Moshannon Valley Community Development Council which is housed in the same building as the library and has its own homepage at <http://www.philipsburg.com>. The library is not part of the homepage. The Online project computer will be it's first Internet access computer. The service provider for Philipsburg is tied-in to State College which is the commercial heart of Centre County. Osceola, which added the Internet last year using private contributions, is already using a less recently developed provider called Clearfield Internet Access which is in Clearfield County. Clearfield Internet Access does have a homepage but there is no evidence of the Osceola Mills Library homepage at the <http://www.clearnet.net> address.

As telephone connections exist in this part of central rural Pennsylvania, the link between Clearfield and State College involves a long distance charge. There is no charge between Osceola and Philipsburg, and no charge between either Osceola and Philipsburg and Clearfield. However, there is a charge for either Osceola or Philipsburg to call State College; and one for smaller communities in the Clearfield County service area, such as Houtzdale (just six miles on the other side of Osceola) to call Clearfield but not a similar charge to call Philipsburg. This is because GTE plays a role in Clearfield County phone connections. What does all this mean? It means the Internet telecommunications links up to this point have been drawn by the commercial interests, and clearly could prove a detriment to forming a local library

network linking these two libraries, even these two counties, since they will be using two different service providers. That is, the battle lines have been drawn here by commercial interests, not the communities, and may not be in the public interest.

Internet connectivity is made over the phone lines, and rural has always meant fewer people over a greater distance which also means long distance charges to make a call or an expensive 800-number option as a service provider. "Telecommunications issues are especially difficult, given the large telephone companies' interest in selling many rural routes because they are not profitable enough,"¹¹ and this is one of the problems the Telecomm Act is seeking to remedy.

What other options do librarians have? Other than commercial networks librarians can call networks provided by local/state governments, educational organizations, free-net, or any other regional or statewide network. According to the NCLIS survey most libraries serving communities of similar size (under 5,000) are using either local/state government (26.1%) or state library networks (29%). In 1994, survey results indicated that more small libraries used state library networks (41.1%) and less used local/state government networks (2.6%); while the number of libraries of comparable size using commercial providers shot up from 1994 (5.9%) to 1996 (9.1%). Adding Philipsburg and Osceola to the next survey will continue this trend.

Looking at these same results by Northeast Region, one finds a significant trend that is less apparent, but could speak in favor of the Online at PA Libraries project, if librarians are resourceful in creating networks. For the Northeast Region in 1994, commercial providers ranked third (11.9%) and dropped slightly in 1996 (11.7%) while regional statewide networks jumped (6.4% to 20.6%) as did local/state government networks (3.1% to 20.9%). This trend is far more conducive to the possibilities facing the neighboring libraries of Philipsburg and Osceola for forming or joining a local area network via the Internet. Thus far, the author has found no information on how to form LANs provided to rural library managers as part of the Online project.

The next benefit named by NCLIS is communication with other professionals. The Internet is an interactive reference tool — the only fully interactive resource other than the librarian and his or her staff. The Internet, some claim, is about communication with "any of ten million people, located around the world."¹² This author prefers a more pragmatic approach, which classifies the methods of interaction using Internet as those services providing e-mail, listserv, discussion

groups, and real-time chat rooms in which the user sends a message and, hopefully, gets some sort of personal response. This discussion will not glorify the virtues or question the authority of any of these added services, but making these services available to the public using a solitary library computer takes memory, a lot of memory, and requires a strong policy statement. E-mail is stored in memory until it is deleted by the user, and those who subscribe to listserves receive their responses as clusters of e-mail messages. For these accounts to be private they must be a separate address for each patron, another storage and programming problem.

Even amateur netizens know the benefit of such communication, but newcomers to the Internet will not. Those who haven't yet discovered these fringe benefits of the Internet will find a useful explanation in Allen C. Benson's *The Complete Internet Companion for Libraries* which discusses all but the new chat rooms. He begins his work by stating, "The challenge for librarians is to learn the characteristics of the expanded palette of information sources and to learn how to use it most effectively."¹³ Unlike other information sources, librarians must constantly work with the Internet, because it changes daily. Also any instruction for patrons on the use of Internet involves far more than handing them a book and showing them how to use an index.

Quite often in the past librarians elected to begin with staff-only access to these benefits. In fact, of the projected 91% of U.S. population served by public libraries connected to the Internet by March 1997, 37.6% provide staff only access.¹⁴ Other online resources list a similar margin of staff only access. "The librarian in a library is the largest single user location grouping among the most frequent searchers of National Library of Medicine databases"¹⁵ through the Internet, ranked only behind health care providers in the home and office and scientists in the office. For that matter, OCLC's cataloging database has been secretly housed on computer workstations hidden in the back rooms of larger public libraries for years. Though the Online in PA project specifies public access, the nature of the information services the public may use with the Internet may vary.

There has been a distinct trend, due to user demand of making access to the Internet more public since 1994 installations, so rural library staff with only one computer may find themselves competing with the public for use of these benefits. Only by looking at previous decisions made by other libraries will Pennsylvania managers know what to do. The NCLIS report indicates that 17.2% of the libraries the Internet serving less than 5,000 offer public e-mail access, the

highest percentage of public access. Fewer of the libraries serving larger communities offer e-mail. Those libraries offering e-mail least (4.1%) serve communities of 50,000 to 99,999 which may reflect integrated computing power as much as size of community. Based on this, there seems little trend for avoiding offering full Internet services including e-mail as soon as reasonably possible.

What each manager does decide to do will be a matter of policy. In fact, those libraries participating in Online at PA Libraries are strongly encouraged to develop their own policies based on the needs of their communities. The bottom line managers must face when deciding whether or not to add e-mail availability to public access policies is storage and computing power. Too much mail can crash any system. Managers administering and designing policy must decide not only the technicalities of allocating space, but also predict how their communities are going to use that space. Are patrons likely to abandon their accounts without even signing off, forcing the added duty on staff of deleting overdue e-mail accounts? Should fines be imposed? How? All this will have to be included in each library's policy statement.

Contrary to survey trends, the logical solution is to begin by offering as the public learns its way around cyberspace. In terms of the legislation, librarians have until the year 2002 to solidify such matters. Of course, in the meantime, there will always be exceptions which must be apprehended by current policy. No doubt, volunteer netizens will be the most recruited volunteers for a while, trading public computer use time for knowledge. No additional staff or consultants are specified in the Online project, though one workshop was offered to rural library managers.

The third most important benefit of connecting to the Internet according to NCLIS, probably holds the greatest appeal for Pennsylvania's rural branch managers and their patrons. That is, the ability to enhance reference service capabilities. One can almost hear library managers breathe a sigh of relief at this benefit. At last, a benefit that speaks library-talk and raises library issues instead of political double-speak or corporate online connectivity jargon.

Indeed, even the simplest connection, a dial-up text-only connection to the Internet, offers far more raw information than any small rural library like the two branch libraries mentioned above has ever offered before. Budgets over the past few years have allowed little room for collection development, and most of that has gone to purchase the more popular best sellers that have the greatest circulation.

One pioneer of installing the Internet in public libraries, Michael Schuyler has said, "Without access to knowledge, libraries are store-houses for little-used, often forgotten, superseded facts. Like it or not, new knowledge is on the Internet."¹⁶ Despite any reservations librarians may have about the authority and validity of the information available on the Internet, the information it contains is, for the most part, current. Moreover, though there has been no survey to date, it is probably more popular than any best seller. Popular books may become a television mini-series, but already many television informational programs, networks, and even commercials broadcast Internet addresses. Proper promotion of the Internet access available at local levels could be the greatest boon to public libraries since librarians incorporated trade books into their readers advisories, and promotion plays a key role in the Online in PA Libraries Program, both when it is installed and as the services offered to the public expand.

But, like the government with their telecommunications regulations, library professionals must be careful not to make the same mistakes they made in the past when offering advisory and information search options, and they must be careful to avoid the same pitfalls they faced when offering popular works along with literature.

Recently, a couple library scholars have taken to calling the Internet "The Invisible Electronic College,"¹⁷ a catchy nickname that could very easily stick. The idea of an invisible college is not new. In 1743, a biographer claimed that Robert Boyle called the assembly of curious gentlemen who later gave birth to the notable Royal Society of England an invisible college. In the radical 1960's the term "invisible college" gained popularity again by referring to the quirky letters on any number of topics which were passed among colleagues on turbulent university campuses, but which never left their respective campus and were never subjected to peer review as print documents such as journal articles are.

According to the scholars who coined the term, the Electronic Invisible College of Internet "is a populist, anarchist, quirky intellectual playground in which ideas, data, insults, comments, drafts, comments on drafts, and on and on are exchanged at a rate that defies rational use."¹⁸ The Electronic Invisible College sounds not only universally appealing, but almost refreshing when compared to the realm of ordered, filtered, authorized, and mostly valid printed information.

However, even the most basic dial-in access that offers text-only data from the Internet provided by the Online project, requires the library to cover the cost of a dedicated line. Though Internet users can

visit and gather information on major geographical locations down to the most intimate details, such as the population of students on a particular campus or a list of works housed at a particular museum; none of the sites is guaranteed to provide accurate information by any authority. The Internet is an invisible university because it offers no peer review to guarantee accuracy and graduates not experts in any field. The reference possibilities are as nondescript as they are endless. Though the Internet offers far more information than a small collection could offer, it is important that even small collections of print documents of authority not be compromised in the effort to pay electronic expenses. Yes, the benefits of Internet information is easy to ascertain, but it is a benefit edged with liability. Therefore, any librarian can promote it, so long as he or she does not compromise the original mission of the library in the community. Much of the literature claims those lacking formal education can grow incrementally as their information systems do, that promoting this new service will renew interest in public libraries; but each library's policy will have to determine how this new resource is used by patrons.

NCLIS's letter, dated July 1996, to the President concludes on a serious note which may be cause for some alarm in light of the Online in PA Libraries project. The letter states, "The Commissions research prompts concern that public libraries serving smaller communities of 25,000 or less may not be able to provide public access. Without the Internet access, public libraries serving residents of smaller communities may lack any means of access."¹⁹ Therefore, this is indeed the eleventh hour for speculation. What happens from this point on in Pennsylvania rural libraries with the Internet will be part of the next survey and report. There's no more room for hedging bets in Pennsylvania — our libraries got their piece of the pie. Now the question is what to do with it. The only recommendation that the NCLIS Report offers is that everyone "work together to identify policies and programs so that public libraries in every community will fulfill a central role in assuring universal access to advanced information and communications services."²⁰

Policies and programs — let's unpack the boxes for real and take a stark look at what our librarians need to do to get that darn Internet hooked up — their very survival may depend on it. For no matter what the benefits may be, they have been determined to be too great to be ignored any longer. Further speculation must now turn into a positive plan of action that does not compromise the development of print collections with extra expenses but instead enhances each library facility as intricate part of each community.

The Internet is not the only information system. "There's also that radically innovative low-power, portable, random access, read-only, high density, text-oriented storage device - the book. It was on the cutting edge once, too."²¹ What did the librarians first do with it? No, cataloging came later. The first thing librarians did was stack it on the shelves so it would be easy to access. That's what the Online in PA Libraries project has done.

If one wants access to the Internet, what does one need? Librarians have what they need — a computer and a telephone. But a computer is interactive, not as well but similar to library staff. What do computers need? A service provider. The service provider is like the binding of book. Service providers are part of the production cost of digital information. They can be negotiated, even subsidized, but they cannot be avoided; and this is what all the legislation is about, as much as librarians would like to think it's about much more nobler causes.

At this point one can only assume that librarians will find the best methods for selecting service providers the same way they found for acquiring popular books, and this will involve big business just like book publishing has. Though unique, the Internet is just another special collection that is part of the whole library structure. Managers cannot afford to disarm their traditional mission and historical development by becoming enthralled with digital format at the expense of their overall mission.

What does a librarian pull off the shelf when he or she searches the Internet and selects a site? A homepage is the container for the information, but homepages are quite different from books. They can be linked together. In fact, entire networks can be linked together using homepages. Internet service providers aren't free, but hypertext links are. Even the most basic Internet connection begins as a whole collection itself — a collection that demands careful evaluation and instruction.

Whether or not the librarians can add these tasks to their daily duties without added help, or whether they get a pay raise because of these duties will have to be determined by each librarian and his or her Board of Directors. One has to wonder how Pennsylvania rural library managers will fare in light of existing funding structures as they now exist locally. One thing is certain when considering the Online in PA Libraries project — the status quo of Pennsylvania's rural libraries will never be the same again. Any further speculation will be history.

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Department of Library Science
Lehigh University of Pennsylvania 69
Lehigh, PA 16214

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Center for the Study of Rural Librarianship
Department of Library Science
166 Carlson Building
Clarion University of Pennsylvania
Clarion, Pennsylvania 16214

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Center for the Study of Rural Librarianship Director:
Bernard Vavrek

Editor:
Mary Lou Pratt

Editorial Committee:
Susan Hill
Mike Jaugstetter
Tim Lynch

Editorial Assistants:
Michele Mrazik

Subscription Manager:
Michele Mrazik

Library Assistant:
Suzann Lawlor

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KCnet: A Rural Area Network Model

by Judith Yoho

Visions of Technology in Our Schools

Much of the current excitement about technology focuses on how it can be used to support student achievement at school. In spite of conclusive findings that cooperative partnerships between the home and the school can dramatically raise children's academic achievement, technology-enhanced connections between home and school receive scant attention and meager resources.

What if technology were used to support classroom instruction, skill practice and learning at home, as well as communication among parent, student, and teacher? What would this learning community look like?

Keystone Central School District, KCSD, in the community of Clinton County, PA, asked these questions under the direction of a new superintendent as the process of strategic planning began early in 1993.

Strategic Planning

A strategic plan is a statement of the vision(s) which an organization has for its future. In essence strategic planning challenges each school district to revisit Horace Mann's advice to the effect that a community should find out what the best parent wants for his/her child and then provide that level of education for all children. (10)

Before real change can happen, a school community must identify and share common beliefs about teaching and learning. These beliefs should be identified through a process that encourages input from the total school community—students, parents, community/business representatives, and staff.

The KCSD Community

Keystone Central School District is unique in both its size and in the fierce territorial protection which its citizens bestow on the schools located in their neighborhood.

At 985 square miles or approximately 2/3 the size of Rhode Island, KCSD is geographically the largest school district in Pennsylvania.

When strategic planning began in 1993, there were four high schools, 12 elementary schools, and a vocational school. The distances between the four high schools ranged from a minimum of 10 to a maximum of about 60 miles. Recent consolidation has combined two high schools but the school

area locations remain the same.

Clinton County Statistics

With a population of approximately 37,500 (mostly rural) Clinton County has an unemployment rate of 7.1% and a median household income of \$22,128 in 1990. (3)

URBAN AND RURAL

Urban

Inside urbanized area0
 Outside urbanized area9,230

Rural

Farm737
 Nonfarm27,215

Lock Haven, the county seat, was one of 33 communities in the United States to receive Rural Designation as an Enterprise Community in 1995. The loss of several industries in Lock Haven, such as Piper Aircraft and American Color and Chemical, is indicative of the economic slump.

OCCUPATIONS

Managerial and professional specialty occupations

Executive, administrative, and managerial occupations.....1,093
 Professional specialty occupations 1,882

Technical, sales, and administrative support occupations

Technicians and related support occupations 458
 Sales occupations 1,406
 Administrative support occupations, including clerical 1,973

Service occupations

Private household occupations 29
 Protective service occupations..... 219

Strategic Planning Needs Assessment

In response to the needs of the schools and the community, the strategic planning committee identified communications as their #1 target area for improvement. An internal school survey was taken to analyze the current status of inter- and intra-district communications. It indicated that they were limited to:

- Inter-office mail distributed daily in Lock Haven area: Renovo and Sugar Valley receive inter-office mail twice a week
- Meetings before/after school hurried due to travel time delays

- One-way intercom from the office for broadcast messages within every school building
- Telephone and fax communication from within administrative offices at each school
- Teachers mainly use informal verbal communication between classes
- Access to Internet in assorted locations

Internet and the KCS D Technology Plan

Internet came to the KCS D community with educator guest accounts through local Lock Haven University in December 1992. At the same time the strategic plan was being formulated, the new Technology Planning Committee was gaining momentum. With the assistance of their Intermediate Unit, they too had a needs assessment prepared to indicate the status of technology in the schools. In addition, a technology consultant, Dr. Tom Egan from West Chester University, was hired to assist in the development of a technology plan for the schools and the community of Clinton County.

It is almost impossible to emphasize enough the difference the Internet made on the joint planning processes. This rural community had access to current online information about strategic planning issues. The Technology Planning Committee downloaded a dozen or more technology plans from the "new" ftp repository at Mississippi State University (National Center for Technology Planning <http://www.msstate.edu>). Asynchronous e-mail was vital to the planning process.

Also vital to the Strategic Plan was the adoption of the KCS D Technology Plan by the School Board in March 1994. So visionary was the board in supporting the technology applications outlined in the plan, that it also passed a \$2 million dollar technology bond for its implementation. The Technology Planning Committee immediately prioritized the funds for: (11)

- Network Infrastructure
- Personnel—Technology Coordinator and Network Supervisor
- Hardware and Software
- Professional Development
- Research and Development

As the Technology Department progressed, a general fund line-item budget would be developed to take over everything except the network infrastructure component.

Members of the Technology Planning Committee began joining a new listserv called the National Information Infrastructure for Education, NII-Ed. They could see that the National Information Infrastructure was evolving, as was educational reform. It would be imperative that the two evolve together or there would be the danger that the educational reforms, such as national standards, curriculum frameworks, authentic assessment, teacher pre and in-service programs, would be irrelevant to the circumstances of working in a networked, information intense and communications based global society. They knew that educational reforms are driven by the changes in the society which include information systems and communications. (6)

NSF Grant—KCnet

The collaborative planning process in KCSD was inspired to a great extent by the leadership in the district. The superintendent empowered educators and community members alike to jointly plan for teaching and learning in the 21st century. From this knowledge-rich collaborative environment sprang forth a proposal for an NSF Planning Grant to prepare for networking in the school district and the community. It would be called the Keystone Community Network, KCnet, and education would be its anchor tenant.

The 1994-95 NSF Planning Grant provided for two major procedures:

- Site visitations to school and community networks
- Local workshops involving successful network models

KCSD teachers, school board members, university faculty, and community members traveled to Pittsburgh (<http://www.ckp.edu>) where student access models and proven infrastructure design were viewed. In Bethlehem (<http://204.170.128.4/>), a tremendous professional development program in the schools and a computer-buy program for the home were modeled. And in Blacksburg, Virginia, (<http://www.bev.org>), we saw that high speed community access to the home and to public access sites were attracting a computer literate industry and work force to the area.

Back in Clinton County, a team from the National Center for Supercomputer Applications (NCSA) in Chicago demonstrated their "new" World Wide Web browser, Mosaic. The Internet was changing before our very eyes, and rural Pennsylvania could virtually travel the globe with its metropolitan neighbors.

The Philosophy of Technology Integration

It was evident to the members of the KCSD Technology Planning Committee that The \$2 million dollar Technology Bond would best be put to use for a robust infrastructure. Equipment and training should be phased in according to a plan of action based on teacher readiness and available budget funds.

The work of Dr. Judi Harris from the University of Texas at Austin was viewed as a model for technology integration and training. Dr. Harris' recommendations are based on the work of Everett Rogers (1986) in telecommunications innovations. (5) In summary, the work says that generally only 10 percent of the users on a computer network contribute approximately 50 percent of all of the online traffic. The other 90 percent of the users contribute the other 50 percent. If we want telecommunications innovations to be used in powerful ways in precollege learning environments, we need not attempt to convince every teacher, or even the majority of teachers, to use them. Instead, Rogers suggests, we should target the opinion leaders within the social system of the school or district.

The KCSD plan to target opinion leaders involves the use of Teacher Technology Proposals for the acquisition of classroom computer equipment. The technology proposal requires the educator(s) to:

- Outline a specific plan for the integration of the technology in their curriculum that is in line with the district goals
- Enroll in prerequisite training in basic computer applications
- Develop an assessment plan to provide feedback for the success of their technology integration plan

The KCSD Teacher Technology Proposal has been tremendously successful as a tool for emphasizing curriculum integration and readiness training for technology integration. The assessment portion of the proposal becomes the feedback and case study instrument for evaluating best practices for technology applications. Additionally the proposal process has actually created a growing demand for the technology, as it is viewed as a privilege to use computers in education, and not an added chore. Teachers help each other write the proposals twice a year, and whole-building action plans are written around technology initiatives in each school. The General Fund Technology Budget has been gradually increasing to meet the purchasing demands of the technology-ready classroom teachers. The district vision of 5-6 computers per classroom has already been realized in a few where innovative teachers are leading the way.

A sustainable method of technology acquisition is also being pursued through the districts Tech Prep program at the vocational school. The Keystone Central Area Vocational Technical School is currently researching an electronics/computer program that would prepare a skilled workforce capable of building and maintaining computers in the schools and in the community, much like the already existing auto repair and carpentry programs that are in operation. Funding options such as grants and leases are also part of the normal protocol for the technology infusion in KCSD.

The Rural Funding Problem

No single issue takes a larger toll on our schools than the lack of adequate funding. Rural America is dependent on federal spending for "infrastructure development," however, updated federal spending figures show that urban areas still get the lion's share of federal funds spent in Pennsylvania (see Figure #2). Data taken from the 1994 Federal Funds Report shows that rural counties receive less money per capita from federal sources than do urban areas. (2)

More than 50 percent of U.S. public schools now have access to the Internet. However, access to the Internet varies by school characteristics. Only 31 percent of schools with large proportions of students from poor families have access to the Internet, compared to 62 percent of schools with relatively few students from poor families. In Pennsylvania, rural counties are poorer than their urban counterparts. (2)

Pennsylvania ranks 37th in the number of students-to-computers with a ratio of 12:1. As reported in *USA Today* (April 4, 1995), Pennsylvania is among the top five states who have the most school districts suffering from "technology poverty". Every effort should be made to ensure that the emerging high-performance networks offering education, health, and government services reach rural areas.

KCSD—Partnerships and Grants

Keystone Central School District continues to seek grant partnerships with other schools and community agencies for project startup and upgrade technology costs. Several recent grants include:

- 1994-95 NSF Network Planning Grant (\$50,000)
- 1995-96 PDE : Distance Education (\$21,000)
- 1996-97 PDE : Distance Education/Satellite Dishes/Training (\$133,000)
- 1995-96 Goals 2,000 (\$15,000)

- 1994-95, 1995-96 E D C O R E from International Paper (\$18,000)
- 1996-97 PDE Technology Demonstration Grant (\$150,000)
- Link To Learn : Testbed (\$600,000)

KCSD Mission Statement: (10)

Keystone Central School District and the community, in partnership, will successfully challenge learners to become world-class citizens who will be responsible, contributing, and ethical members of an ever-changing global society.

Strategic Planning Beliefs:

We believe that all individuals have the right to a clean, safe, nurturing environment.

We believe that each individual will have the opportunity to achieve his/her highest potential.

We believe that all individuals can and will learn.

We believe that the entire community is responsible and accountable for the educational process.

We believe that parents are the first and most influential teachers.

We believe that learning is a life-long process.

We believe that individuals will become responsible, productive citizens.

We believe in equal opportunities for all.

We believe that all individuals will be treated with dignity and respect.

KCSD Network Design

The decision to move to full fiber connectivity throughout the school district (and therefore the county) was made by KCSD in July 1996 after a year-long study comparing several models for WAN connectivity over large geographic areas. At that time, KCSD was running IMUX 56Kbps frame relay lines to five of its schools and a T1 to the network center with Internet service provided through SSHenet by PREPnet. With service from three telephone companies and long-distance charges between KCSD schools, there were more than 300 telephone lines (including foreign exchange lines) installed in the district. Network access in computer labs was slowing down as more and more computers came online; and the migration path to compressed video meant purchasing Codex and expensive classroom equipment at every rural site that needed to take part in distance learning courses.

Additionally, with LAN connectivity at its schools increasing, one or network servers at each site in the nearly 1,000 square mile district

would be needed. This, in turn, meant that more staff would be required to maintain widespread servers, LAN, and compressed video equipment.

For this large rural area, the TCI Voice/Data/Video solution makes sense. With the TCI fiber network, KCSD has virtually created a 1,000 square mile LAN. Fewer servers are required because they can be centrally located at the network center. Satellite downloads can be shared with every site over the high speed fiber to each site. Full-motion, continuous-presence video is available in every classroom using affordable camera equipment that can be plugged into the existing television cable outlet. With the purchase of a PBX for the network center, voice traffic will be run over the fiber network, thereby eliminating more than half of the phone lines and accompanying long distance charges (this alone will pay for approximately half of the monthly fiber rental).

KCSD Technology in Education

Technology can transform teaching and learning. "To accomplish that job," says Dr. Linda Roberts, director of the Office of Educational Technology, U.S. Department of Education, "technology must be an integral part of your school or community's overall plan to move all children toward high academic standards (1994)." For students, the ability to use technology has come to be recognized as an indispensable skill. The Secretary's Commission on Achieving Necessary Skills (SCANS) stated this in the starkest terms, "Those unable to use [technology] face a lifetime of menial work."

Successful adoption of educational technologies focus on three primary concepts: (6)

1. The benefits of the use of technology will not be apparent in an educational organization until ALL students and teachers have equitable access to the technology.
2. Students learn by constructing their own knowledge and sharing that process with others in their classroom and across networks by instructors who have become effective facilitators of learning.
3. The combination of equitable and universal access, student construction of knowledge, and facilitative teaching will result in the transformation of learning and teaching.

Making the connection between technology, teachers, and parents is one of the most important steps we can take to make the most of past and continuing investments in educational technology. It is central to the ultimate

goal fostered by these investments: not just helping students become competent users of technology, but helping them become more accomplished learners overall.

Why Internet

For 500 years books were the unmatched resources for making ideas, knowledge, and culture available to students, and so long as this role was unquestioned, educators paid little attention to how the characteristics of books shaped the whole instructional enterprise. Printed textbooks meant information was stable and so too, then, was the educational environment. But with current innovations in communication and computation, books have been displaced from their privileged educational position. The electronic means of access to information now requires librarians and others to assist as information specialists...helping us to locate, manage, and discriminate relevant information for assimilation in the construction of knowledge for synthesis, analysis, and problem-solving. (8)

As educators reorganize the culture, so too they alter the pedagogy guiding its study. The project method has come into its own, and ideas about instruction give way to those about construction. Students, usually working together in groups, receive an intellectual charge, a large intellectual task that occupies them for a sustained period of time. The curriculum no longer consists merely of a series of lessons in a set of subjects. It is rather a field of information, ideas, and sets of tools, disciplines, and methods by which students bring information and ideas to bear on the charge, the task at hand. Learning will come to take place as students pursue various tasks, mobilizing fields of knowledge and intellectual tools in the process learning by doing.

With project-learning, even young students are empowered to make decisions for themselves that teachers formerly made for their pupils. The pedagogy can be individualized and student centered to an extent never before possible. (8)

Information Problem

But there is a problem with information in the information age. In today's world, information is everywhere, and schools have little ability to influence its quality, or even to preview it, before students receive it. The problem is not that schools don't have enough control of information; the problem is that, in general, they are doing little to equip students with the ability and the inclination to judge for themselves the quality and accuracy of the information they receive. (13)

Information-age schooling must go beyond access, organization, and absorption. Fundamentally, and from the beginning, schooling must also emphasize critical analysis, integration, and application. Teachers need to take an active role in teaching their students to pose intelligent questions, view information with critical eye, and consider alternative explanations.

Recent studies in the use of classroom telecommunications activities will aid educators in preparing for this new role. One such study follows:
(1)

Recent Study—The Role of Online Communications in Schools: A National Study

Online connections appear to be critically important if students are to grow up literate in the 21st century. Yet online access in itself may not be sufficient to bring about improvements in student learning. Past research on computers in schools suggests that computer installation is only the beginning; other factors, such as integration of technology into the curriculum, teacher training, and ongoing support are important components for success. We urgently need research specifically evaluating the effectiveness of online communications for learning. In addition, we need to understand what kinds of supports for curriculum integration, training, and online use are required for the success of this new medium in school.

CAST (Center for Applied Special Technology) begins to address these needs with the Scholastic Telecommunications Study (STS), an independent educational research and development organization designed and conducted to evaluate the effectiveness of online use, as distinguished from the use of other technologies and curricular reforms, to improve student learning.

STS was conducted in seven of the nation's major cities during the 1995-96 school year. The goals of the study were: (1) to measure the effects of online use on student learning, including information processing, communications, and presentation skills, and (2) to gain insights into what it takes to use online communications effectively in the classroom. A Civil Rights Unit was the instructional focus of the study and was designed to be implemented by both experimental and control classes.

The experimental group seemed to be more able to take advantage of the curriculum supports and the many resource and communication opportunities available to them. Their final projects were rated as stronger overall, stronger in most of the specific competencies measured. The

experimental group scored significantly higher than the control group on measurements of information-management, communication, and the presentation of ideas. This offers evidence that using Scholastic Network and the Internet can help students become independent, critical thinkers, able to find information, organize and evaluate it, and then effectively express their new knowledge and ideas in compelling ways.

For a complete explanation of the instructional design and Civil Rights Unit materials, I point you to the web site at <http://www.scholastic.com>.

Linking School and Home

Robert McClintock, who directs the Institute for Learning Technologies at Columbia's Teachers College, believes community-based organizations ought to become the middlemen in the movement to bring high technology into the full-service school concept. If schools can't be linked into every home, they might be connected to other community institutions, such as the local YMCA. "Community centers that are already doing after-school programs often have computer centers in them, and as schools begin to make more use of wide-area connectivity, some kind of dial-in capability makes sense." (7)

In addition to Internet connectivity throughout the community of Clinton county, Keystone Central is currently piloting the new materials from the Lightspan Partnership, Inc. Lightspan creates a bridge of learning between schools and homes by using affordable interactive technology accessible through the family television. Teachers use Lightspan in the classroom, then send students home to continue learning with their families and with one another.

Through the use of Lightspan's reading/language arts and mathematics curriculum, the academic needs of students who learn at different rates and with different learning styles are met. Characters and stories are used to help students grasp the relevance of the skills and knowledge they are developing. The programming also encourages cooperative and constructive learning activities among students, parents, and teachers.

Distance Education

In communications, within a decade: (12)

- Distance will be irrelevant
- Location will not matter
- Different modes (sight, sound, both, etc.) will be personally selected

- Human interactions with communications systems will be natural to use and easy to use ("like the telephone")
- Costs to communicate will be nominal
- Information of all kinds will be readily accessible via networks

The impact of distance education is twofold. First, it allows individuals to have access to the resources needed for lifelong learning. Second, the technologies that support this new generation of distance education make it possible for universities to create student-centered, resource-based teaching-learning environments best-suited to the needs of citizens of an information society. (12)

Today's distance education is forging new partnerships among universities and between educational institutions, businesses, and government. In the future, it also could foster productive partnerships with the emerging "knowledge industry."

The very same technologies used for distance education form the basis for a more informed electorate, a more involved citizenry, and an ever more efficient free market economy. By allowing every citizen to obtain the information they want and need, when and where they want it.

KCnet Today

The Keystone Community Network was incorporated on June 21, 1995, as a non-profit organization, 501 (C) (3), sharing the KCSD infrastructure.

KCnet holds as its vision: (9)

"We believe that communication helps us to build alliances, partnerships and working relationships with diverse constituencies...and that with a collaborative effort, we can use these opportunities to establish a sense of community to reach mutually determined objectives and enable *Education for Everyone, Everywhere, Everyday.*"

For the community, access to the information highway may prove to be less a question of privilege or position than one of the basic abilities to function in a democratic society. It may determine how well people are educated, the kind of job they eventually get, how they are retrained if they lose their job, how much access they have to their government, and how they will learn about the critical issues affecting them and the country.

has lost its staying power, and lifelong learning has become a necessity in order for professionals and skilled workers to maintain their competitive edge. Two-thirds of the present workforce will still be employed at the beginning of the next century; a large percentage will need retraining. (12)

Sharing resources between school district and community, KCnet now provides more than 1,000 Internet access memberships to the residents of Clinton, Lycoming, Potter, and Centre county at an affordable, sustainable rate of \$10 per month.

Public Access and Users Groups

Computer labs in the schools are quickly becoming public access sites for students and community members alike. A recent online survey (<http://oak.kcsd.k12.pa.us/~survey>) was generated as an online project by a sixth grade class in KCSD to determine the potential for Community and Education collaborations on "Projects for Mutual Benefit" (Interpreted: "What are some ways we can work together to learn from each other and, in doing so, improve our community and our education?") Students are currently collating the survey results in hopes that the results of this survey will assist in the development of shared services between the school district and the community.

Four computer user groups have begun in the area in response to the need for continuous training. The user groups meet bi-weekly or monthly with a major instructional focus each time and they report the minutes of their meetings on the KCnet Home Page for others to share in the learning process.

Recent Collaboration

Another joint venture between KCnet, KCSD, and LHU is the Volunteer Community Service Information HomePage. Two students at LHU began the project as a "Leadership" class requirement and also in a response to the needs of KCSD students for Community Service Project information. Service projects will be required for KCSD graduation beginning with the 9th grade class next year. Gathering information from organizations in Clinton County and the surrounding area, the LHU students have put together a site that will evolve as more and more Community Service Projects are completed by KCSD students. The site is also becoming popular with community volunteers and service organizations who are facilitated by its ease of use and concise volunteer information.

Clinton County has made a major leap into the Information/Communication Age, one that can bring significant educational and eco-

conomic benefits. Our vision for schools and communities in the 21st century has a focus on credible solutions that share infrastructure, education, and services with the community, and we have started to build a successful model, KCnet, in rural Central Pennsylvania.

Following the lead of the KCnet prototype in Keystone, similar "electronic communities" are being funded in a recently awarded Pennsylvania Link To Learn Testbed Grant for Clinton, Centre and Clearfield counties.

Link To Learn Testbed

Link to Learn initiative(http://www.state.pa.us/Technology_Initiatives/121/link2lr7.htm) is a three-year, \$121 million initiative designed to move Pennsylvania to the head of the class in educational technology. The Basic Education and Higher Education components will combine eventually to form the Pennsylvania Education Network (PEN). The PEN will integrate existing networks into a "network of networks," using fiber, cable, wireless, and other technologies. This network will be a collection of community-based networks offering opportunities for all Pennsylvanians to use the vast amount of resources available online.

The KCnet consortium was formed and funded by the Link to Learn Testbed Initiative to extend the KCnet rural area network model into Clearfield and Centre counties. Sites included in the KCnet consortium testbed grant include Bald Eagle, Bellefonte, Centre County Technical School, Keystone Central, Keystone Community Network, Lock Haven University, Penns Valley Area, Philipsburg-Osceola, and State College.

Project Goal and Objectives

KCnet Consortium Goal: *KCnet: The Fiber Model for Rural Connectivity* will demonstrate a full voice/data/video fiber network that promotes the shared use of resources, both human and physical, to more efficiently and effectively link rural students, staff, and communities.

Objective #1: To expand a fiber network that will physically connect educational institutions in three predominantly rural Pennsylvania Counties (Centre, Clearfield, Clinton) and impact students and communities in an additional two counties (Lycoming, Potter).

Objective #2: To expand Internet connectivity to the newly-linked schools, residences, and businesses of these rural communities via the community network model.

Objective #3: To develop organizational and governance models (policy & procedures) that bring together communities and institutions with different resources and schedules so that they can be shared effec-

tively and efficiently.

Objective #4: To develop basic training modules for network usage and specific training modules for the teaching/learning process and business activities utilizing the network.

Objective #5: To implement a technology "Help Desk" in the consortia area to provide support for network- and technology-related questions.

Objective #6: To initiate various end-user programs such as continuing education, classes for credit, professional development, business applications, K-12 classroom-to-classroom, etc.

Objective #7: To work with other networks in different regions to develop benchmarks and standards for upcoming connectivity.

Objective #8: To perform formative and summative evaluations of programs, financial benefits of the network, and scalability of the network model to determine its replicability.

Value as a Model

KCnet: The Fiber Model for Rural Connectivity is a proposal for a fully integrated voice/data/video network.

To be a valuable PEN testbed, the experimental model must be scalable, replicable, and affordable with education as its anchor tenant. The KCnet model has its roots in the shared infrastructure of LHU and KCSD. In a very real sense, KCnet is a microcosm of the PEN...beginning with the KCSD educator accounts on the LHU network, moving to community accounts on the KCSD network...and now growing to potential attachments for residents, business, and medical links on the KCSD fiber backbone.

Transporting the KCnet model to seven other sites will be a test for its scalability and replicability. It will also provide the opportunity to test organizational structures that are not presently in place as the complex process of scheduling classes with institutions that have vastly different schedules is undertaken. Finally, the project will test the cost effectiveness of fiber over expansive geographic areas as financial models are developed in support of education and commerce.

Project Viability

Link To Learn testbed grant funding will substantially assist in the implementation of the high-speed fiber network over this three-county rural area. However, for educational institutions, communities and businesses to use this network, they must understand the cost trade-offs involved.

KCSD based the affordability of the fiber network on the following:

1. With the high-speeds available on this fiber backbone, central location of equipment such as servers and CD ROM towers means less equipment to purchase, load, back-up and maintain.
2. High-quality, full-motion, continuous-presence video is available with portable camera equipment that attaches to the existing television cable feed in every classroom. High-cost, compressed video equipment is not needed at each site—and a single Codex can be scheduled to serve a wide-spread area when video compression is needed to link with other compressed sites.
3. Telephone services will be available over the fiber backbone to every site without inter LATA charges. In addition, the elimination of at least half of the phone lines in the district will show a realizable cost justification over the short- and long-term.
4. Sharing the fiber backbone with the community through attachment of local business and health care agencies can mean a lower rate for the educational institutions that sign the initial contract. KCSD will realize a decrease in monthly fees at each site as new agencies attach to their network to share costs.
5. Finally, as educators begin to realize the full potential of the voice/data/video network that is being implemented at their schools (through professional development)—they will begin to utilize these tools in the place of conventional “chalk and books”—which means that their own general fund budget for curriculum items will be reorganized and directed to pay for these new instructional technologies.

Partnership Evolution

As the KCnet Consortium is strengthened by the sharing of more and more resources, this rural partnership will evolve into a transparent (virtual) classroom (community) that is empowered by its ability to readily access current information for cooperative learning and decision-making.

Local dial-up to the network by “extended” community members over the three county area will be available through the KCSD technology network center and the KCnet non-profit organization just as it is currently available to all of Clinton County and parts of Lycoming and Potter County as well. TCI will continue to maintain the fiber backbone and end equipment to ensure reliability with minimal district staff requirements.

Vision—Community of Learners Hypothesis

Keystone Central School District and the community of Clinton County began their strategic planning process with a hypothesis:

Community and school interaction improves education and community life.

Here is a recent message from a member of that community to a teacher in the district:

Mr. Hanson,

I just want you to know that Amy came home last week after art class with paint on her pants and it didn't wash out. "Back in my day," this is exactly what teachers wanted to avoid. As a result, creativity and independent thinking were not encouraged. So, this is not a note to complain, it is to thank you! I love to watch Amy at work on an art project - she seems very relaxed and confident and really enjoys herself. She takes pride in her work. I'm not concerned with how "talented" she is, I'm just very pleased she enjoys art. I'm sure you can take some of the credit for this.

Thank you

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Public Library Services in Nigeria: Clientele Evaluation of Offa Township Library

by J.S. Opaleke

Abstract

The usefulness of any public library depends on its ability to serve the community as a general center of reliable information and to provide opportunity and encouragement for people of all ages to educate themselves continuously. Hence, this study seeks to discover who the clientele of Offa township library are, their status, and their views on the state and services of the library in terms of location, collections, infrastructural facilities, services rendered, security, and general activities believed to be vital to the clientele of a public library.

Investigations show that 51.28% of library users are mostly students ages 19 and below, while 78.20% of respondents are male users. An overall assessment of the library shows that users are relatively pleased with the operation of the library but want something done with the opening hours, newspapers collection, shelf arrangement, and period of lending.

Introduction

A public library is a library established for the use and benefit of the citizenry. A public library is, according to Akinyotu ¹, the university where all could seek and acquire knowledge and information that are vital to the fruitful pursuit of individual and societal goals.

The public library, through its provision of current newspapers and periodicals, serves as a public information center, and, through its circulation of books and other learning resources to the citizens, becomes the chief instrument for free distribution of knowledge in a democratic society. Hence, its improvement must be sought not only by the government but the entire community.

Background Statement

Offa, the seat of Old Ibolu Kingdom and headquarters of Offa L.G.A. whose citizens' main industry is education, had the first library in the town through the Native Authority (N.A.) in 1946. This small structure was close to Offa Grammar School, Offa, the first voluntary agency insti-

tution in the Old Northern region, established in 1943. Then the site was within the reach of the populace.

With the increasing population of the town and obsolete collections in the library, a philanthropic organization in the town called "Club 80" launched an appeal fund and built a new structure that was later handed over to the Offa local government authority for management in 1993.

With the handing over, the library has since been put into use, and is supposed to serve students of primary, secondary, and tertiary institutions in the town, literate civil servants, and traders. Are these people really utilizing this opportunity, and how satisfactory are the services of the library since it was handed over to the local government authority?

Statement of Objective

Due to the relocation of the library from the heart of the town and the civil service procedure adopted for its management, the study seeks to know:

- the users of the library;
- the impression of the patrons with the location, infrastructural facilities, collection, library arrangements, services rendered, safety, and general issues related with library management; and
- suggestions by the clientele for any improvement.

Literature Review

It is essential that public libraries justify their existence and prove that they are basically an educational community utility. To this end, evaluating the library provides a factual basis on which to plan and make judicious budgetary allocation.

Quite a number of surveys in the literature reveal that studies have been carried out on public library evaluation, but only those that are closely related to the present one will be reviewed.

Ogunrombi ² examined the uses made of resources in meeting clientele needs of Oyo State Public Library, Dugbe, Ibaden, and highlighted clientele comments for the improvement of library services. In his analysis, 20% indicated that the services are good, 54.16% ranked the library services as poor, and 29.7% opined that the services are fair. Ogunrombi that poor services of the library as claimed by the respondents and because the users use their own textbooks to study the library.

Balogun³ investigated the problems affecting the effectiveness of library services provided for the library patrons of Kwara State Public Library. His investigation shows that library services were hampered by an unclearly defined acquisition policy to guide its developmental program, poor budgetary allocation, lack of certain physical facilities, and short closing hours.

Ekoja⁴ appraised the satisfaction the adult literate users of Sokoto State Library, Sokoto, derive from its services. In his investigation, the users found satisfaction in the opening hours, assistance and disposition of staff, photocopying services, adequacy of books, journals, newspapers, magazines, and furniture, conduciveness of the environment, etc. On the other hand, he found that the users were dissatisfied with non-lending of books, improper shelving and shelving delay, constant power failure, and so on.

Antwi⁵ studied the relevance and adequacy of Bauchi State Library services. His findings show that 74% of the users were secondary school students. Their assessment shows that the readers were satisfied with the assistance rendered by the library staff, the disposition of library staff, and the seating capacity of the library, but did not find the collection adequate and relevant. The study concludes that the clientele rated the overall services of the library as above average.

Malumfasi⁶ studied the services of Kano State Public Library services where he found that 98.3% of the users questioned were satisfied with the facilities. On the other hand, his collation revealed that 81.6% were not satisfied with the library collection. According to him, the materials were irrelevant to their needs because they were either obsolete, too advanced or too elementary, and many subject areas were not covered.

Chweh⁷ carried out research on areas in which public and academic libraries can be assessed. His results bring out fifty areas of library services which are very important to users and which can be used for library evaluation. The areas include: availability of books (that users look for), periodicals, quality of reference services, good reference collection, and so on.

Horrocks⁸, in his survey of the Regional Central Library in Enugu, showed that 75% of the clientele had some formal education, with male users outnumbering the female, and their age bracket ranging between 18 and 24 years.

Methodology

Survey methods were adjudged best to exploit the needed information; hence one hundred users who patronized the library within the four days of study were the population used as samples and were randomly selected by the last week of January 1997.

Twenty-five copies of the questionnaire were randomly administered each day between the hours of 8 to 9 a.m., 10:30 to noon, and 1 to 3 p.m., which are the peak periods of clientele visits to the library as per the library statistical record. Unavailability of a reliable and well documented register of bonafide users accounted for the use of visiting patrons to the library.

The responses received from the questionnaire administered to the readers and informal interviews held with the head of the library staff serve as sources of data for this study.

Analyses and Findings

From one hundred copies administered, seventy-eight responses were found adequate and usable to extract the needed information and thereby analyze for discussion. This represents 78% of the expected returns. According to Gay,⁹ for descriptive research a sample of 10% of the population is minimum for a large population.

Part A: Background Information

(1) Age and sex distribution of the library users

51.2% of the respondents are within the ages 19 and below. 27.18% are within age bracket of 20 to 29; 8.59% are within 30 to 39 years (Table 1). This shows that the library usage decreases as people advance in age. This agrees with Onadiran¹⁰ that the bulk of the users in all the public libraries are between 15 and 24 years of age. The reason for this low number may be due to the fact that most Nigerian adult readers read newspapers, magazines, one or two local papers, and nothing else.¹¹

Also, the percentage of male users is high compared to female. 78.20% of respondents are male readers while 21.79% are female (Table 1). When compared with the result of Onadiran's findings, female users are low in all public libraries. This is because of the educational level of women and their domestic activities.

Table 2 shows that 84.61% of the respondents are students. 6.41% are unemployed, 5.12% are professionals, and 3.84% are civil servants. This finding agrees with other findings of Horrocks, Antwi, and Angolu.¹²

It is very sad to note that the same pattern of the past still exists even today in our public libraries in term of users' age, sex, and occupation.

Table 1
Age/Sex Distribution

Age	Male	Female	Total	%
0-19	33	7	40	51.28
20-29	23	6	29	37.18
30-39	4	3	7	8.59
40-49	1	1	2	2.56
50-59				
60+				
Total;	61	17	78	100
%	78.20	21.79	100	100

Table 2:
Occupational Distribution

Occupation	No.	%
Laborer	—	—
Skilled Trader	—	—
Office Worker	3	3.85
Professional	4	5.12
Housewife	—	—
Student	66	84.61
Unemployed	5	6.41
Others	—	—
Total	78	100

Part B: Library Collection

The collection development of any library is the architect of successful library services. Hence, the investigator sought to know the readers' views on the quality and quantity of the various collections displayed for readers' Tables 3-9 show readers' assessment as per the respondent analysis.

Table 3:
Availability of Books

Rating	Frequency	Valid %
Strongly Satisfied	04	5.12
Satisfied	24	30.76
Fairly Satisfied	30	38.46
Not Satisfied	10	12.82
Strongly Dissatisfied	10	12.82
Total	78	100.00

Table 4:
Availability of Journals/Periodicals

Rating	Frequency	Valid %
Strongly Satisfied	7	8.97
Satisfied	11	14.10
Fairly Satisfied	29	37.17
Not Satisfied	14	17.74
Strongly Dissatisfied	17	12.82
Total	78	100.00

Table 5:
Availability of Reference Collections

Rating	Frequency	Valid %
Strongly Satisfied	6	7.69
Satisfied	17	21.79
Fairly Satisfied	24	30.76
Not Satisfied	14	17.94
Strongly Dissatisfied	17	21.79
Total	78	100.00

Table 6:
Availability of Newspapers and Magazines

Rating	Frequency	Valid %
Strongly Satisfied	6	7.69
Satisfied	12	15.38
Fairly Satisfied	20	25.64
Not Satisfied	27	34.61
Strongly Dissatisfied	13	16.66
Total	78	100.00

On book collection, 5.12% of the respondents were strongly satisfied, while 30.76% were satisfied and 38.46% were fairly satisfied; 25.64% were dissatisfied. For journal assessment, 8.97% of the respondents were strongly satisfied with the library serials collection, while 14.10% were satisfied and 37.17% were fairly satisfied. 17.74% and 12.82% indicated their dissatisfaction (Tables 3-4).

Tables 5 and 6 indicate the degree of reader satisfaction with reference and newspaper collections. Judging by Onadiran's results, reference collections are poor in public libraries. Consequently, the number of users that consulted reference materials is also low. With the growing number of tertiary institutions in Offa township, there is need for improvement in the serial collections.

Tables 7-9 give the breakdown of respondent assessment of quality of collections for adults and children and their assessment of the size of the collections.

**Table 7:
Quality of Collections**

Rating	Frequency	Valid %
Very Good	11	14.10
Good	16	20.51
Fair	28	35.89
Bad	10	12.82
Very Bad	13	16.16
Total	78	100.00

**Table 8:
Quality of Children and Collections/Services**

Rating	Frequency	Valid %
Very Good	3	3.84
Good	7	8.97
Fair	30	38.46
Bad	18	23.07
Very Bad	20	25.64
Total	78	100.00

The size of the library collection does not determine the efficiency of its operations but rather the quality of the few collections. On the other hand,

the size gives the readers a wider opportunity to search for information. The respondent assessment shows that there is need for great improvement on both the quality and quantity of the library collection.

**Table 9:
Size of Collections**

Rating	Frequency	Valid %
Very Good	4	5.12
Good	19	24.35
Fair	30	38.46
Bad	10	12.82
Very Bad	15	19.23
Total	78	100.00

Other problems exist. Although the actual number of the library collection was not investigated, the collection displayed is an eyesore. Going by Ojunseye's recommendation¹³, the books stocked fall short of minimum standard of one book per head of literate population. The investigator's interview revealed that budgetary allocation to the library is too small to meet the library needs. Moreover, the acting library officer in charge is not given a free hand to operate.

Part C: Infrastructural Facilities

Provision of good infrastructural facilities in a library will sometimes improve the number of the library clientele. Hence, some of the essential facilities expected in a library were given for assessment by the respondents. This is divided into seven areas (Tables 10-16).

**Table 10:
Provision of Chairs**

Rating	Frequency	Valid %
Very Good	26	33.33
Good	28	35.89
Fair	8	10.25
Bad	10	12.82
Very Bad	6	7.69
Total	78	100.00

Table 11:
Provision of Good Lighting for Reading

Rating	Frequency	Valid %
Very Good	44	56.41
Good	30	38.46
Fair	4	5.12
Bad	—	—
Very Bad	—	—

Table 12:
Provision for Parking Space

Rating	Frequency	Valid %
Very Good	13	16.66
Good	13	16.66
Fair	18	23.07
Bad	12	15.38
Very Bad	5	6.41
Total	78	100.00

Table 13:
Provision of Social Activities Bulletin Board

Rating	Frequency	Valid %
Very Good	4	5.12
Good	8	10.25
Fair	20	25.64
Bad	32	41.02
Very Bad	14	17.94
Total	78	100.00

Table 14:
Provision of Comfortable Lounge Area

Rating	Frequency	Valid %
Very Good	6	7.69
Good	17	21.79
Fair	18	23.07
Bad	25	32.05
Very Bad	12	15.38
Total	78	100.00

Table 15:
Provision of Enough Desks for Reading

Rating	Frequency	Valid %
Very Good	20	25.64
Good	24	30.76
Fair	12	15.38
Bad	14	17.94
Very Bad	8	5.12
Total	78	100.00

Table 16:
Pleasant Atmosphere

Rating	Frequency	Valid %
Very Good	26	33.33
Good	44	56.41
Fair	5	6.41
Very Bad	—	—
Total	78	100.00

Going by the users' assessment, the facilities provided within and outside the library for users are not only good but comfortable. This could have arisen from the fact that the club members that donated the building are literates.

Part D: Location of Library Materials

Tables 17-20 show reader assessment on access to the library materials. Table 16 shows how dependable and how well the available catalog serves the readers. 8.97% of the respondents claim it is fairly dependable, while 91.07% say it is not dependable. Tables 18 and 19 analyzed assessment on materials collection, shelf arrangement, reserve collection, and library system and organization efficiency.

Table 17:
Available Catalog Dependability and Ease of Use

Rating	Frequency	Valid %
Very Dependable	—	—
Dependable	—	—
Fairly Dependable	7	8.97
Not Dependable	71	91.01
Total	78	100.00

Table 18:
Easy Access to Materials

Rating	Frequency	Valid %
Very Accessible	22	29.48
Accessible	30	38.46
Fairly Accessible	16	20.51
Not Accessible	10	12.81
Total	78	100.00

Table 19:
Shelf Arrangement

Rating	Frequency	Valid
Very Good	10	12.82
Good	23	29.48
Fair	21	26.92
Bad	10	12.82
Very Bad	14	17.94
Total	78	100.00

Table 20:
Access to Reserve Books

Rating	Frequency	Valid %
Very Accessible	10	12.82
Accessible	11	14.10
Fairly Accessible	27	34.61
Not Accessible	30	36.45
Total	78	100.00

Table 21:
Library System and Organization Efficiency

Rating	Frequency	Valid %
Very Good	18	23.07
Good	25	32.05
Fair	19	24.35
Bad	8	10.25
Very Bad	8	10.25
Total	78	100.00

Generally, respondent assessment indicated that users have problems in getting their needs. As Marsterson said¹⁴, a library may register little sat-

isfaction with public library materials and its arrangement in the sense that borrowers fail to find what they seek simply because their expectations are low. Nonetheless, all efforts must be geared up to satisfy readers to locate available library collections without spending much time.

Part E: Library Services

Respondent rating of library services appears to be encouraging (Tables 22-24). These services include quality of reference service, friendly service, and helpful staff. To some extent, respondent ratings of interlibrary loan and loan period shows disservice to the library clientele (Tables 25-26). According to Onadiran: "It is interesting to note the relatively low number of users who are completely satisfied with the public library services in Nigeria." And as Carter and Wallace¹⁵ rightly indicate, the readers' satisfaction depends directly upon the kinds of books the librarian has available for his or her use in the discharge of his or her job.

Table 22:

Rating	Frequency	Valid %
Very Good	10	12.82
Good	18	23.07
Fair	24	30.76
Bad	20	25.64
Very Bad	6	0.76
Total	78	100.00

**Table 23:
Friendly Service**

Rating	Frequency	Valid %
Very Good	18	20.07
Good	46	58.97
Fair	14	17.94
Bad	—	—
Very Bad	—	—
Total	78	100.00

**Table 24:
Helpful Staff**

Rating	Frequency	Valid %
Very Helpful	20	25.64
Helpful	2	41.02
Fairly Helpful	15	19.23
Not Helpful	11	14.09
Total	78	100.00

**Table 25:
Inter-Library Loan System**

Rating	Frequency	Valid %
Very Good	—	—
Good	12	15.38
Fair	32	41.02
Very Bad	17	21.79
Total	78	100.00

**Table 26:
Adequate Loan Period**

Rating	Frequency	Valid %
Very Satisfied	2	2.56
Satisfied	14	17.94
Fairly Satisfied	34	43.58
Not Satisfied	28	35.89
Total	78	100.00

**Table 27:
Adequate Library Hours**

Rating	Frequency	Valid %
Very Satisfied	8	10.25
Satisfied	8	10.25
Fairly Satisfied	9	11.59
Not Satisfied	53	67.94
Total	78	100.00

Table 28:
Quietness of the Library

Rating	Frequency	Valid %
Very Quiet	48	61.53
Quiet	25	32.05
Fairly Noisy	5	6.41
Noisy	—	—
Total	78	100.00

Presently, the library operates between 8 a.m. and 3 p.m. Table 27 shows respondent feeling to these hours. 67.94% are not satisfied with the present opening hours. It is hoped that the dissatisfied respondents have reasons for not attending the library within the opening period. The current opening hours have prevented most expected library users who are civil servants, traders, and school children in lower grades. The failure of the library not to open on Saturdays and Sundays is, as Onadiran rightly puts it, "disheartening." He noted that no public library in Nigeria opens on Saturdays and public holidays. As to the quietness of the library, the respondents are satisfied and the library must keep it up.

Part F: Site and Security

Though the library is located in a relatively extreme end of the east side of town and the building fenced, the investigator sought for user appraisal of the present location of the library, its directional sign(s), and its security effectiveness. The respondent rating is analyzed in Tables 29-31.

Table 29:
Location of the Library

Rating	Frequency	Valid %
Very Good	26	33.33
Good	44	56.41
Fair	7	8.97
Bad	1	1.28
Very Bad	—	—
Total	78	100.00

**Table 30:
Direction Sign(s)**

Rating	Frequency	Valid %
Very Appropriate	—	—
Appropriate	32	41.02
Fairly Appropriate	17	21.79
Not Appropriate	29	37.17
Total	78	100.00

**Table 31:
Library Materials Security System**

Rating	Frequency	Valid %
Very Good	30	38.46
Good	14	17.94
Fair	24	30.76
Bad	2	2.56
Very Bad	8	10.25
Total	78	100.00

Problems and Suggestions

Respondents went beyond the scope of the questionnaire to express their feelings about the management of the library. For instance, the readers expressed their bitterness about shelf arrangement, misplaced books, and the hiding of books. The staff is therefore urged to be vigilant and ensure that daily shelf reading is done.

Another area which requires improvement is favoritism in the discharge of library books to friends beyond the stipulated days. The staff are advised to be just and fair to their clientele.

Another problem area is the bringing of newspapers meant for the staff to the library. This is not ideal for effective library management and should be investigated. The library should be granted a specific sum of money to buy its own newspapers and weekly magazines even if it only a paper. This will enable the library to bind the copies of the dailies at the end of the year for reference.

Conclusion

to stay. The various areas explored and analyzed have even indicated that its services are quite satisfactory to the respondents. However, the management of the library should look seriously into the problem areas for necessary amelioration. This may include handing library control to the state library board for management and supply of competent professionals for effective services.

J. S. Opaleke is a reference librarian at the University of Ilorin Library, Ilorin, Nigeria. He also is a member of the Offa Township Library Board and current treasurer of the Kwara State Division of the Nigerian Library Association.

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Outreach and the Public Need

A paper presented at
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October 4-5, 1996
Bismarck, ND

by
Judith A. Drescher

Memphis/Shelby County public library system has been offering traditional bookmobile services since 1935 (with a break between 1951 and 1965 due to budgetary constraints)—making neighborhood stops, serving people in institutions, and driving to remotely populated areas in places where we did not have one of our 22 branches.

Two very specific studies got our staff to look at mobile services in new ways. One was a 1989 facilities study of all of our locations. In that study, we determined where we needed new branches, which ones needed renovation and rehab, and started planning for a new central library building. We also noted that all the places that we had thought of as “rural” just 10 years ago were booming incorporated areas with a higher per capita income than most of the city residents—and these were the ones who were receiving door-to-door service!

A few months later, we hired a marketing research firm to help us plan for the future and determine our priorities. Among the suggestions made by the public was that we “focus” our branch collections. They said things such as “I want to go to a branch and KNOW that they have material for a third grader to do her homework,” “I’m willing to drive a greater distance if I KNOW that I can find all the business material at a location,” “Even though I live in the city, I have no transportation, and live in a housing project of 5,000 residents. I want you to bring services to me.”

Some of the most creative and talented library professionals work at Memphis Public Library, and in 1990 we put many of them to work on an External Services Task Force to brainstorm ideas for our future. In particular, we wanted them to think about the information we had recently gathered from the two studies I just mentioned. They too realized that the library system services needed mobility, but we had to re-think the service patterns of what we called “bookmobiles.” The recommendations from

ERIC up included:

1. Expand the present bookmobile fleet with smaller, multi-purpose vehicles;
2. Make mobile services units available to child care centers;
3. Provide mobile units to visit the residents of Memphis Housing Authority properties; and
4. Provide mobile services geared to literacy training.

With the information from these three studies, we were ready to make a decision about the purchase of new mobile units. We were heavily influenced by the idea that people wanted specifics— they wanted to know what we offered, in particular, not in general. We also realized that, if we received funding for an additional mobile unit, we would need to use existing resources, people, and collections. While we were meeting about these issues, the mayor of Shelby County, William Morris, announced a huge initiative called “Free The Children,” a program that was to offer information, job skills and training to targeted inner city neighborhoods. This was just what we needed as a starting point for our new thinking about mobile services!

We knew the library already had resume books, job test manuals, information on interviewing, and we had the staff in both our business and sciences department and our information and referral services (LINC) that were already offering their expertise. I can remember at one meeting that we started thinking about an entire fleet of mobile units that all used our most recognizable name -LINC. We came up with JOBLINC, KIDLINC, (a preschool library), LITLINC (literacy training on wheels), POPLINC, (a popular library on wheels full of fiction), and several others. We knew that if we could take what we already had in our permanent facilities and spread it around the county on wheels that we'd have a real winner of a mobile program.

So, we applied to Shelby County, along with many, many other social service and job training agencies, for a \$100,000 grant to purchase a new mobile unit that we called JOBLINC—and it was completely funded by the Free The Children project. In addition, the United Way agreed to fund a portion of materials purchased and some staffing costs, and a LSCA grant provided funds for additional resources.

JOBLINC is a mobile service which helps job seekers locate employment opportunities. It also helps employers find workers. It is designed to help residents find jobs by providing listings of available jobs, aid in locating training opportunities and one-on-one assistance in conducting job

searches and preparing for interviews. A 35-foot unit, JOBLINC has books, videotapes, audiotapes, and computer programs for job seekers and employers. It is also on line with the library's LINC information and referral files as well as the online human services directory. Although the service has been well received, the library has had many examples of "serendipity" relating to JOBLINC that has given us an even higher profile in our community.

As a result of going to a jobs fair, a representative of the Tennessee Department of Employment Services came to the unit and began talking with our staff about cooperation. In particular, he was concerned about the fact that so many people who were unemployed had to sign up for a profile, get a number, and then sit at the employment office all day just waiting to see if a job came open. When we found out that the state offices in Nashville were downloading all available jobs overnight to the local West Tennessee office, we told them that we had the equipment to have the information downloaded as well. The state donated the necessary equipment to the library and also annually funds a part-time staff member who edits the information each evening. The job availability information is broadcast twice a day on the library's cable TV channel, and is put on tape early each morning for our mobile services.

Originally, JOBLINC made stops at food stamp offices, employment offices, neighborhood fairs, mall parking lots, the post office, and right in front of the main library (which amazingly is a very busy stop for them). The staff soon found out, however, that by the time people left the food stamp office, they weren't interested in staying around any longer—so JOBLINC went where they were going—the grocery store!

Other cooperative efforts that benefited JOBLINC and the community resulted as well. Although we had hoped that some job counselors would volunteer their time, very few did. However, when Memphis was one of the cities hard hit with military base closings and the Defense Depot, one of the largest warehouse operations for the military was closed, we immediately volunteered to take JOBLINC on site and asked for other agencies to join us. Library staff did workshops on interviewing and resume writing, some of the churches in town sent volunteers to teach stress management and other coping skills. One of the best things that happened was that local employers started calling us and wanted to know if they could set up shop along with JOBLINC at the sites we were visiting since there was such a ready pool of potential employees. Since that one contact, from Kentucky Fried Chicken, several fast food chains,

Manpower Employment services, a number of warehouses, temporary holiday employers, and Williams Sonoma have all joined with JOBLINC staff to recruit and hire people to work in Memphis.

Recently we tried an experiment with our regular mobile services (the more traditional library on wheels) and JOBLINC. Both units went to public housing project areas as a team. JOBLINC staff helped people with questions and information about jobs, and the mobile services staff did story hours for children who came with adults who were looking for work. JOBLINC staff recommended items to check out about job searches, while mobile services staff gave them a library card and checked out the resources to them. We quickly discovered that combining these services targeted a whole new set of people.

We have discovered that other organizations recognize the value of job services on a mobile unit. For instance, when the City of Memphis' Housing and Community development department was writing a federal grant for \$4M, they included the library in the funding so that we could bring JOBLINC to the job training sites. The grant funds that are coming to Memphis for military base re-use also includes funding for job training through JOBLINC.

Finally, as a result of seeing just how many people in our region were in the job market, the LINC department planned a "Jobs in July" jobs fair at the main library. The results were tremendous and almost beyond our ability to offer a quality fair. Over 4,500 people came to the jobs fair in one day, to visit with 45 companies in the morning and 45 different companies in the afternoon, all of which were looking for good employees. Many of the employers said it was the BEST jobs fair they had ever attended because of the diversity of the people who attended. Of course, those of us who work in public libraries have always known that we're the best place to meet the wide range of community residents. It's very nice to know that area businesses (and potential sponsors and supporters) now know it as well.

We had such success with our JOBLINC service that we began to explore ways to expand our mobile services, especially focused on children. I've often said that if the public library were in the for-profit business, we would have been in big trouble 10 years ago when we began to notice the lack of attendance at pre-school story hour. Although we have spent years providing programs for young children with the idea that they

public library, the increased numbers of two-wage earner and single parent families meant that more and more young children were in day care settings. Our library staff decided to tackle the issues of public library services to preschool children in day care settings.

Spurred on by the America 2000 program, a federal program that listed its number one goal as “getting every child ready to learn” as he or she entered school, we decided to design a “pre-school door to learning” on wheels and take story hour and professional children’s librarians to day care settings. Because we had learned so much from our experiences in working with the community and changing the focus of JOBLINC as our users demanded, we brought together three focus groups to help us plan what we were tentatively calling KIDLINC. Library staff presented our plans to day care providers and owners, staff from Nashville (the state capital) who granted licenses to daycares, faculty from the schools of social work and medicine at the University of Memphis and University of Tennessee medical school, the Parenting Center, and other social services organizations. Although they liked our ideas, they had some words of advice they said that there were a good many resources for pre-schoolers in our community. The greater need was for training and hands-on experience for the day care workers and teachers. In addition, we learned that each day care worker was required to take 12 hours of training per year—a difficult requirement when you are working long hours at your job. Thus was born TRAINING WHEELS—a 40-foot mobile service with tricycles and bicycles with HUGE training wheels as the logo. Its mission—to provide quality on-site training for those who work with young children., with particular emphasis placed on emerging literacy and the importance of reading. Launched just over a year ago, we had high hopes, big plans and missionary zeal in taking preschool demonstration projects and services to the 700 licensed day care centers in Shelby County.

Funded once again by Shelby County government as part of their program to improve the education of very young children, TRAINING WHEELS is managed by the staff of the main library children’s department with the already existing resources that they have. Staff comes from the children’s department, plus the children’s librarian from the nearest branch location to the site stops.

Designed by our staff as a demonstration library and classroom, the back of the mobile unit has a carpeted area that can hold about 15 children for story times, movies, puppet shows, and fingerplays. This area also des space for a video player, screen, and storage and equipment to

play music cassettes. The front of the mobile unit is a classroom and observation area where our staff and day care workers can observe the demonstration program. The librarians talk with the day care staff about why we've chosen certain stories or songs, why they are presented in a specific order, and how to hold and use books as well as tell stories. In addition, the classroom setting is designed with fold down tables, VCR, chairs, and a white board so that classes can be held on the unit for parents and teachers.

We thought we could provide tailored training to meet the needs of each group—we can, but we ran into some unforeseen problems. We thought we could leave many of the very attractive items (dolls, puppets, manipulatives) out and visible during the story time. That proved to be a real distraction. Our children's services staff tell me that children who are not often used to a visually rich environment are easily distracted by the availability of so many books and toys, so now the staff puts out on display only what they need to have at the time.

We thought we could visit day care centers that were doing a "pretty good job" and help them refine and enhance their services. With over 700 licensed day cares in Shelby County, we quickly found that there was a desperate need for our services, and too, too few resources to meet demand. Many centers have minimal lighting, unsafe and inadequate furnishings and toys, no books, bare walls, and a "sit down and sit still" philosophy. Because the staff at many day care centers were unaware of the deficits that our library professionals saw in parts of their program, we had to begin the delicate task of introducing suggestions for improvement without disparaging the good efforts that were already taking place. Fairly quickly, the library staff found that they had to concentrate more and more on those day care centers that had the least resources and limit our visits to those which were already doing "pretty well."

We thought we could visit two centers a day, but found that this idea didn't work. In order to see each class in a small group and to have an opportunity to meet with teachers during the children's lunch or nap break, [we found] that the best way to visit was "all day," i.e., 9 a.m. to 2 p.m.

One part of the demonstration program was that we had invested money in resources that would circulate in kits to the day care centers. We thought we could quickly develop kits that would be left at the center after the demonstration program was done on TRAINING WHEELS. The idea was library staff would do a story hour around a theme—frogs, for

instance—and then would leave a kit with a frog puppet, an audio tape of frog songs, some books about frogs and some art work ideas. As the project developed and the staff gained more of a sense of what would be actually useful, the kit project grew. After a year of developing complete, scripted storytimes, and putting together fingerplays and props, bibliographies, songs, art, recipes, gross and fine motor skill activities, ordering puppets, realia, videos, book/cassette pairs, containers, and of course books, we are finally putting together 40 kits, cataloging them and getting them ready for circulation.

Staff thought that the refrigerator was a luxury but soon discovered that, when you do five storytimes and five training sessions in a five-hour period, you tend to lose your voice! They have been very grateful for a place to store cold drinks to alleviate vocal stress.

We thought that we would need lots of publicity and found that the demand for this type of service far exceeded the resources and the one mobile unit that we had to offer.

In addition to local funding and in-kind support, the library once again found that, because we had focused our mobile services, other organizations partnered with us to seek grant funds. The most significant grant that we have received so far is part of the "Born to Read" project funded by the Prudential Insurance Company through the American Library Association. In conjunction with Le Bonheur Hospital—a pediatrics hospital in Memphis—the library is providing services to adolescent mothers and their babies as part of a Healthy Families program.

What do we have planned for the future? Just recently I sat in on a mobile services meeting where staff was brainstorming about future mobile services as well as refinements of our present ones. Here are some of the ideas that were batted around:

a mobile homework center in conjunction with the various school systems or privately funded by a group interested in education issues,

a mobile service to kids in day camps and summer parks programs that would concentrate on after school programs during the school year in conjunction with the park district,

a mobile service to GED sites, training programs for ESL classes, services to immigrants, foreign populations, and "trapped" populations (libraries, training centers, etc.),

a mobile service geared to families, especially through hospitals, churches, homeless shelters, and clinics,

a mobile service for seniors, especially those in residential homes, nursing centers, and congregate meal sites,

a mobile technology training center which would take computers, software, and trainers to many areas of the city where the library does not have a nearby branch.

Of course, we don't have any firm plans or even the possibility of funding for any of these new targeted mobile services. But based on our past experience of finding out what people wanted, designing to meet their needs and interpreting the need to funding sources, the Memphis/Shelby County Public Library and Information Center has a strong track record and credibility in providing these kinds of focused mobile services to county residents. With the changes in the welfare system, block grants, and the desire of communities like ours to help people better their lives, I am certain that funding sources will be available to help the library meet these needs.

Staff at Memphis Public Library is using the philosophy of the "great one," hockey player Wayne Gretsky in their planning. When he was asked how it was that he was so successful at hockey, it is said that he replied, "I don't skate to where the puck was or is, but where it's going to BE."

That's a good philosophy for those of us who are designing the future of mobile services as well.

Judith A. Drescher is Director of Libraries at Memphis/Shelby County Public Libraries, Memphis, TN.

Bookmobiles: A Bibliography of Resources

by Laura Blasingham

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