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**Library and Information Services  
Policy Forum Proceedings  
Topic: Library Services and  
Technology Act (LSTA)  
State Grant Program:  
Implications for Use of and  
Additions to National Library Data  
September 15-16, 1997**

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# **Library and Information Services Policy Forum Proceedings**

**Topic: Library Services and Technology Act (LSTA)  
State Grant Program: Implications for Use of and  
Additions to National Library Data**

## **INTRODUCTION**

The 1997 Library and Information Services Policy Forum was sponsored by the National Center for Education Statistics (NCES), in cooperation with the U.S. National Commission on Libraries and Information Science (NCLIS), with the assistance of the Institute of Museum and Library Services (IMLS), the Chief Officers of the State Library Agencies (COSLA), and the National Institute on Postsecondary Education Libraries and Lifelong Learning. These proceedings summarize the presentations and recommendations from the meeting held on September 15-16, 1997, in Arlington, Virginia. The proceedings provide background information on the Forum, including an overview of the meeting content, objectives, and format, and conclude with recommendations from the small group discussions. Attachments include the text of presentations available from some Forum speakers.

### **Background on Library and Information Services Policy Forums**

NCES has sponsored Library and Information Services Policy Forums on various topics. The purpose of the forums is to provide input to NCES on the collection, dissemination, and

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use of national library statistics. The meeting is generally an invitational forum of approximately 50 professionals representing library researchers, and practitioners from academic, public, and school library communities, and representatives from IMLS, the Federal-State Cooperative System (FSCS), the American Library Association (ALA) and its affiliate associations, NCLIS, COSLA, as well as staff from NCES' Library Statistics Cooperative Program.

## **LSTA – 1997 Library and Information Services Policy Forum**

The subject of the 1997 Forum was the *Library Services and Technology Act (LSTA) State Grant Program: Implications for Use of and Additions to National Library Data*. The LSTA was selected as the topic for the 1997 Forum because it requires the library community to balance the need to collect national, state, and local statistics. National statistics, such as those collected by NCES, can reflect a common vision, purpose, and goals for all library programs. State or local statistics can demonstrate the effectiveness of unique programs designed to meet needs identified by individual states in their state plans. The 1997 Forum provided an opportunity for librarians, researchers, and statisticians to develop recommendations concerning the content areas for data collection in support of LSTA goals.

The purposes of the funding as identified in LSTA, Section 231, is to:

- Establishing or enhancing electronic linkages among or between libraries;
- Electronically link libraries with educational, social, or information services;

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- Assisting libraries in accessing information through electronic networks;
  - Encouraging libraries in different areas, and encouraging different types of libraries, to establish consortia and share resources;
  - Paying costs for libraries to acquire or share computer systems and telecommunications technologies;
  - Targeting library and information services to persons having difficulty using a library and to underserved urban and rural communities, including children (from birth through age 17) from families with incomes below the poverty line; and
  - Targeting individuals with disabilities and persons with limited functional literacy or informational skills.

### **Objectives and Format of the Forum**

The specific Forum objectives were to:

- Review library statistics and research information to determine existing data items that may help local, state, and federal participants in the Library Services and Technology Act of 1996 to report on LSTA programs;
- Recommend new data elements and methodologies that may be useful to meet the measurement and reporting requirements of LSTA goals; and
- Contribute to the capabilities of state and national reporting agencies to provide the statistics and information that will reflect LSTA program performance and results.

The meeting format included a combination of presentations in plenary sessions and small group discussions. The presentations informed participants about various methodologies, results from research projects, and programs

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related to the purposes of LSTA. In small groups, participants reviewed current NCES library surveys and other research projects, considered new data elements, and identified methodologies for data collection.

## **Presentations**

The Forum included welcome and remarks from:

Pat Forgione, NCES	Diane Frankel, IMLS
Jeanne Hurley Simon, NCLIS	Sandy Cooper, COSLA Tom Sloan, COSLA

In addition, the following topics were presented:

Assessing Progress Towards LSTA's Purposes

*Mary Jo Lynch*

Status Report on COSLA Evaluation Committee

*Amy Owen*

Electronic Linkages and Services

*Gary Rowland, Aleck Johnson, John Bertot*

Determining Underserved Populations

*Steve Fischer, Neal Hohmann, and Gary Strong*

LSTA Connection to Library Services to Children and America Reads!

*Mary Somerville and Carol Rasco*

Using Qualitative Information in a Quantitative Environment

*David Penniman*

Evaluation Techniques through the "Tell It" Method

*Douglas Zweizig*

Importance of LSTA Reporting for National Understanding

*Carol Henderson*

Telecommunications Rates: Update and Impact

*Linda Roberts and Martha Hogerty*

Each of the presentations is summarized on the following pages.



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## SUMMARY OF PRESENTATIONS

### Welcome and Introductions

**P**at Forgone, NCES Commissioner, provided an overview of NCES's mission and its library surveys and discussed how baseline data collected in several of NCES's surveys can be used for the LSTA. (Refer to the full text of this speech in appendix A.)

The Center's mission is to collect, analyze, and disseminate statistics and other data related to education in the United States. Forgone indicated that the Center has been collecting data on academic libraries since 1966 as part of the general higher education data collection. Library data are collected for the different types of libraries through a variety of surveys. Public library statistics have been collected through the Federal-State Cooperative System (FSCS) since 1988. In 1993, the Center surveyed school libraries and media centers. More recently, the Center has surveyed state library agencies and federal libraries. In addition, the Center's National Household Education Survey (NHES) included several questions on public library use. NCES is also planning a library cooperatives survey this year. This survey will provide key national and state indicators of progress toward meeting the LSTA objective of linking libraries by monitoring changes in the number and types of library cooperatives and in the number and types of the libraries they serve.

Forgone emphasized that the NCES role is to collect basic information, not just data on the hot issues of the day. Data collection cannot be driven solely by evaluation needs or legislative program needs; however, NCES is making progress

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toward responding to new needs (e.g., the public library survey is adding electronic services questions to the 1997 survey).

Analyzing data on libraries that are collected in conjunction with other data sets is another strategy for developing national and state indicators. For example, NCES is supporting a study to map public libraries' service areas and to geocode library buildings. Once completed, a merged data file containing the mapping data, the public libraries survey data, and Census data will be created. This type of analysis will be invaluable to the states in their need to know the level of LSTA funding received by each library in the state and how the observed changes fit into the state plan.

**Jeanne Hurley Simon, Chair, U.S. National Commission on Libraries and Information Science (NCLIS)** welcomed attendees and honored John Lorenz for his distinguished service to the Library Statistics Program and to the larger library and information service community.

**Diane Frankel, Director, Institute of Museum and Library Services (IMLS)**, discussed the implications of the Government Performance and Results Act (GPRA) for the continuation of LSTA funds. Due to GPRA, which went into effect in 1993, budget allocations are based on the ability to achieve results. Frankel also reviewed the purposes of the LSTA and described the process for coordinating data collection and evaluation efforts with COSLA. She suggested that it is critical for funding agencies and the library community to answer two questions about evaluation:

1. What difference is federal funding making to our communities? We must support the anecdotal stories with more concrete data.
2. How are we going to measure services to underserved populations?

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**Sandy Cooper, Forum Chair and COSLA Liaison to IMLS,** reviewed the forum objectives, including:

- Discussing what is currently being collected;
- Identifying new data elements, definitions, and methodologies needed to support LSTA; and
- Discussing how NCES, COSLA, IMLS, and NCLIS can work together to contribute to local *and* national efforts.

**Tom Sloan, COSLA representative,** explained the small group process. The groups were tasked to:

1. Refer to proposed FSCS data definitions, but not limit discussion to these definitions or to public libraries;
2. Capture what we would *like* to collect as well as what we *can* collect;
3. Identify methodologies for measurement; and
4. Identify data items that would measure the value of LSTA in terms of impact and outcomes for our customers, and identify key outcomes we would like to accomplish with LSTA.

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## PRESENTATIONS

### **Assessing Progress Towards LSTA's Purposes**

*Mary Jo Lynch*

**Mary Jo Lynch of the American Library Association** provided highlights from her paper "Assessing Progress Towards LSTA's Purposes: How the NCES Library Surveys Can Help." She characterized her work as a narrative description of the existing structure in NCES for collecting data on libraries in the United States. Lynch's paper reflects on how these surveys relate to LSTA. (Refer to full text of document in appendix B.)

### **Status Report on COSLA Evaluation Committee**

*Amy Owen*

**Amy Owen, Chair, COSLA Evaluation Committee,** described some of the challenges of LSTA, provided a brief overview of the state plans, and presented a status report on the Committee's work. One of the challenges of LSTA is to demonstrate through measurement and evaluation that services have been improved as a result of the funding. Owen shared the following thoughts about the state plans (which are available on the World Wide Web): (1) plans show great diversity among states, (2) goals and objectives of the plans are not tied to dollars, (3) plans vary on the extent to which they will be state-driven versus locally driven, (4) plans demonstrate evidence of baseline, formative, summary, or impact data, and (5) definitions used in and provided by LSTA may be interpreted differently by local folks.

The task of the COSLA Evaluation Committee is to develop a model to be used by COSLA to gather data useful at the state

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level and at IMLS. The committee tentatively has identified 50 data elements and has recognized the following data collection needs:

- To develop key performance indicators that are easy to collect and useful at state and national levels;
- To develop ways to identify and share information about best or promising practices, and to consider creating templates for reporting specific types of projects;
- To identify baseline data within states and within NCES; and
- To develop ways to measure impact and outcomes.

The next phase of COSLA's work involves:

1. Creating a subgroup to examine the collectability of the data;
2. Mailing a draft of the data elements to the chief officers before the fall 1997 meeting;
3. Refining data elements and reducing the number of data elements before ALA midwinter; and
4. Providing IMLS with definitions before spring 1998.

The Fast Response Survey System (FRSS) or NHES could possibly include the new data elements.

## **Electronic Linkages and Services: Panel on Methods for Measurements and Reporting**

*Gerry Rowland, Aleck Johnson, and John Bertot*

The panel members discussed evaluation and measurement (inputs and outputs) of electronic services in libraries and the challenges of measuring these services. **Gerry Rowland, a**

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**library researcher with the Iowa State Library** and a member of the FSCS Steering Committee, provided the context for the discussion. Rowland indicated that a panel of experts discussed Internet use about three years ago. The problems they encountered with definitions of the number of “hits” and with state librarians accepting output measures about Internet use prompted them to focus on input measures. (Gerry Rowland’s article on Output Measures appears in appendix C.)

**Aleck Johnson of the American Library Association, Office of Information Technology**, talked about evaluation and how ALA is looking at this issue. He reported on the results of a meeting with Markel Foundation with researchers from Rand, American Institutes for Research, and the U.S. Department of Education. The purpose of the meeting was to come up with a “dream list” of information they would like to retrieve from the ideal process for evaluating library services. This group identified four categories of information: (1) access and equity, (2) usage issues and questions, (3) impact measurements and qualitative measures, and (4) big-picture issues.

Johnson proposed guiding questions under each of the four categories. Under access and equity issues he asked:

- Are more libraries getting access to the Internet? Is Internet access spreading to traditionally underserved areas? How is Internet access changing in these areas?

Under usage, Johnson asked:

- Are patrons using technology and how are they using it? What new services are patrons using? What is the next wave of services? How can we assure that libraries have access to this next wave of services? Is usage spreading to patrons as well as to library staff?

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For impact and qualitative measures, Johnson posed the following questions:

- What is the impact of access on learning? How do you measure it? What are the right questions to ask about impact on learning?

Johnson suggested that policymakers need answers to the question: “What has been the substantive effect of this policy?”

Finally, Johnson provided examples of big-picture questions:

- What are the effects of universal service on the budgets of libraries? Does universal service mean budgets are skewed? Does universal service mean that funds currently allocated for technology uses get reallocated to other areas? Or does universal service mean that libraries can expand services?

Johnson concluded by indicating that the data collected to respond to the above questions are very useful for Congress and for local and state agencies.

**John Bertot, a professor from the University of Maryland at Baltimore County**, reported on the 1997 Public Libraries and the Internet Survey sponsored by the American Library Association and the U.S. National Commission on Libraries and Information Science. Bertot described the tension between specific data collection activities that consider current and future trends, as opposed to ongoing data collection needs that are part of established data collection activities. Bertot indicated that he saw a challenge in changing established data collection to meet the needs of the future.

The 1997 Public Libraries and the Internet Survey revealed that data could be collected on the following: connectivity, services, costs, uses, and impact. Bertot described the challenges of collecting these data to arrive at comparable costs: (1) rural

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areas connect through dial access (since rural librarians do not have direct access, it is difficult to compute their telecommunications costs), (2) equipment costs and telecommunications costs are subsidized in rural areas, and (3) public libraries (regionals, consortia, etc.) do not know how much they are receiving in subsidies..

Bertot indicated that data on connectivity, services, costs, uses and impact need to be broken down in several ways: by city, suburban, rural areas; population served; state level; and branch/outlet level. He stated that questions such as, “How pervasive is Internet activity?” need to be answered. For example, Bertot mentioned that we do not know how many branches are connected to the Internet in a public library system.

Bertot concluded by underscoring the need for all data collection entities—NCES, NCLIS, ALA, Public Libraries Association—to coordinate their data collection activities to avoid duplication and to examine how these activities fit together into a coherent plan about Internet connectivity.

***Participant Comment***

Based on his experience, one participant determined that cost data are hard to collect; and cost data are so ill-defined that some states do not follow definitions and therefore information cannot be used.



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## Determining Underserved Populations

*Steve Fischer and Gary Strong*

### Public Library Geocoding Demonstration

**Steve Fischer from Westat, with the assistance of Neal Hohmann (Geographic Information Systems USA),** provided an overview of the NCES geomapping project for public libraries, which began in October 1996. The purpose of this project is to geocode FSCS public library locations and identify and map associated library legal service areas. Once completed, a merged data file containing the mapping data, the public library FSCS data, and selected Census data will be created for use in a geographic information system application. This type of capability will be invaluable since it will enable libraries and agencies to readily perform analysis previously possible only through the use of multiple data sources and complex analytical techniques.

The project encompasses all public library legal service jurisdictions and over 17,000 public library service outlets, nationwide. The project involves (1) geocoding all library outlets, (2) mapping and digitizing library legal services jurisdictions, and (3) providing documentation and a user's guide.

The project tasks are divided into five phases: (1) geocoding "readily processable" "and moderately difficult" addresses, (2) geocoding "significantly difficult" addresses (e.g., post office boxes), (3) processing conforming legal service area boundaries (county, school district, etc.), (4) producing the initial data file, and (5) determining the method and process for non-conforming legal service area boundaries. Currently, 80 percent of the outlet records are in the file. Subsequent geocoding of difficult addresses (20 percent) have been placed in seven categories: post office box number, no identifying street number, box number only, an incorrect address, no address, duplicate address, and other.

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Fischer concluded his presentation with a demonstration of what can be done with the data. He showed maps of library outlet locations and indicated how FSCS data and Census data can be related. For example, the system could be used for determining and depicting an underserved population based on the parameters and definitions established by a library or library system.

***Participant Comments***

One participant expressed concern about who would have access to the data and how it was going to be used. A second participant suggested that the file itself, the user's guide, and/or the documentation should describe ways for interpreting the data.

**Gary Strong, Director of Queens Borough Public Library,** presented their geomapping project. Strong's project focuses on identifying immigration patterns and projections and languages spoken to determine where the library needs to concentrate services. The data collected and analyzed from the demographic project are used to plan, design, and make decisions about public library programs, services, and collections. Strong described some of the unique characteristics of their library and the library population:

- Urban public library with 62 branches, population served is 1,950,000;
- Forty percent of population born outside the United States;
- Forty-four percent speak a language other than English; over 80 languages are spoken;
- Over 800,000 registered borrowers; and

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- Major collection development projects in Spanish, Chinese, Korean, and South Asian languages; smaller projects in Russian, Hebrew, and Greek.

Queens Borough Public Library has three projects underway. Strong distributed three booklets containing demographic statistics illustrative of the first project, "Mapping Demographics of Queens Ethnic and Language Groups from Public Statistics." Sources of data for this project are the 1990 U.S. Census, New York City Board of Education, and U.S. Immigration and Naturalization Service.

For the second project, "Mapping Demographics of Registered Library Customers," which is in progress, they will geocode 800,000 records and overlay a table with Queens Borough census maps. This project helps librarians determine the percentage of the population registered, average number of transactions per person, gender compared to general population, language, occupational characteristics, and education. Strong emphasized that they were not as concerned with economic characteristics. Based on the Queens Borough experience, economics and social situation do not have much of an impact on whether people use the library. Their most important concern: Does the library have materials, services, and programs they want? If so, people will use the library.

The third project, "Mapping Library Operational Statistics," allows library administrators to address the following concerns: operating costs at community level, discretionary funds assigned by legislators, collections, circulation at branches, what programs are held in what languages, what new borrowers are registered, and incidence of complaints. Queens Borough Public Library's demographer aggregated 1990 Census data to construct a profile of ethnic and language characteristics for each service area constituency. The language data came from Board of Education survey.

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Some of the specific ways these data are used to plan library services, collections, and budgets include:

- Identifying languages spoken to create an international resource center in one of libraries and to display different languages on computer screens for Internet access;
- Altering collection development priorities and budgets based on concentration of where languages are located in the geographic area (materials budget is \$9.2 million); and
- Linking circulation statistics with budget (e.g., Asian language materials circulate more than any other language) so the library can reallocate its budget accordingly.

Strong concluded with some examples of how this project influenced them to change the way they were doing business. They now hold community meetings to discuss expectations of library services; they no longer make assumptions about what people in the community want.

## **LSTA Connection to Library Services to Children**

*Mary Somerville and Carol Rasco*

**Mary Somerville, Past President, American Library Association**, discussed the importance of measuring the impact of library services on children. She recommended that the library community measure the impact of acculturation on the lives of children and families and study the correlation between reading, library use, and SAT scores.

**Carol Rasco, from the U.S. Department of Education**, provided an overview of the America Reads! Challenge, proposed and supported by the Clinton Administration. America Reads is a challenge issued by the President to each citizen in the United States to see that all children read well and independently by the end of the third grade. The

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Administration has submitted legislation to Congress for two components of this program: to examine gaps in early childhood education programs and the role of parents; and to provide more extended learning time and train tutors to work with children.

Rasco informed the committee about the Gorton Amendment passed by the Senate in November 1997. The effects of this amendment, according to Rasco, are to take federal funding (including a substantial amount of Title I funds) from K-3 and, with a few exceptions, put it into a block grant directly to the local education agency:

- Local districts must use funds as they deem appropriate.
- One possible implication is that money that currently goes to districts with higher concentrations of bilingual children will be spread in a block grant across the United States. There will be no special consideration for districts like Los Angeles and Miami.
- Wealthy school districts with greater parental involvement will receive much of the funding previously targeted for children who have the greatest need.
- Half of the Vocational-Rehabilitation money currently spent at the federal level is put into block grants.

[Update: This Amendment was not part of the final appropriations bill.]

The Web site for America Reads! Challenge is [www.ed.gov](http://www.ed.gov). Click on America Reads Challenge.

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## Using Qualitative Information in a Quantitative Environment

*David Penniman, Douglas Zweizig, and Joey Rodger*

**David Penniman from the University of Tennessee** discussed ways to use anecdotal information (stories) so they are collected objectively and scientifically. Statistical requirements involve a different approach to collecting anecdotal information in order to satisfy statistical needs. The approach includes:

- Analyzing stories to make projections;
- Systematically sampling and reporting data by collecting anecdotes to extrapolate and report them as comprehensive through a random or stratified random sampling technique that also allows for incidents with no consequence (that's OK); and
- Conservatively adjusting for anecdotes that are anomalous (e.g., throw out extreme responses).

In reporting anecdotal information, Penniman discussed using a critical incident technique or model. He defined a critical incident as an observable activity complete enough in itself to make inferences about the system that one is observing. The event is critical if it occurs in a situation where the purpose and intent are clear. The steps in collecting and reporting critical incidents are to determine the objectives, develop a systematic plan for collection, and collect, analyze, and interpret data. (Refer to appendix D for copies of the overheads.)

**Douglas Zweizig from the University of Wisconsin** presented a brief overview of the "Tell It" Method, an evaluation model developed under the sponsorship of the U.S. Department of Education, Office of Educational Research and Improvement, Library Programs. Zweizig introduced the model by explaining that it is light on planning because librarians need to spend their time implementing services, not collecting data. In

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summarizing the approach, Zweizig indicated that the method supports purposeful data collection and focuses on the need for a clear vision in the evaluation process. Steps of the approach include (1) talk about the vision, (2) explore alternatives, (3) design your approach, (4) learn from what's happening, (5) let people know what happened, (7) integrate results with ongoing services, and (8) think about how it all worked. The book also includes a section on training others and a chapter on data collection methods. (Zweizig, D., et al. 1996. *The TELL IT! Manual: the Complete Program for Evaluating Library Performance*. Chicago: American Library Association.)

**Joey Rodger from the Urban Libraries Council** concluded this section with a report on current projects that evaluate the impact of public library services. Rodger reported on two programs that measure the impact of education on preschoolers. Both projects presented a new model for library services that transforms the library from a deliverer of direct services to a facilitator of services delivered to the children (train-the-trainer model). The major impact of this model is to leverage staff time and to positively affect the lives of more children. In the Free Library of Philadelphia's project, library staff teach daycare workers to work more effectively with children and books. The evaluation, conducted by Susan Newman from Temple University, is based on prereading literacy skills. The second project, funded by the U.S. Department of Education, was awarded to the St. Louis Public Library (Glenn and Leslie Holt are the contacts).

## **Importance of LSTA Reporting for National Understanding**

*Carol Henderson*

**Carol Henderson, Executive Director, Washington Office of ALA**, described why reporting and evaluation are so important to the LSTA. Henderson indicated that one of the primary purposes for reporting and evaluation for LSTA is for

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continued funding and authorization. She provided an overview of the history and significance of LSTA, and identified lessons learned from the Library Services and Construction Act (LSCA). She concluded with a discussion of the challenges of collecting evaluative data for Congress and for the people served by these programs. (The full text of Carol Henderson's speech can be found in appendix E.)

### ***LSTA and the Need for Thorough Data Collection on Libraries***

Library statistics, if not thoroughly reported, can be misinterpreted. For example, data collected by John Bertot in his 1997 National Survey of U.S. Public Libraries and the Internet indicate that although 60 percent of public libraries offer World Wide Web access, only 9 percent of public libraries have Web access throughout their systems. However, if only the 60 percent figure had been reported, without the qualifying data regarding system-wide access, readers could have been misled about the availability of Web access. By showing both figures, Bertot's findings suggest that libraries need discounted rates or LSTA funds to provide Web access at all library outlets, not just at central libraries or selected branches.

### ***Current Challenges under LSTA***

Henderson indicated that in a changing federal climate of GPRA, Congress is not interested in funding programs simply because they were funded last year. They want each funding agency to answer the question, "Why should this program continue to be funded?" The special challenges of producing evaluative data that are realistic and meaningful include the following:



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- Traditionally, it has been difficult to quantify results of a public good.
  - Library users are voluntary rather than a captive audience which makes it difficult to survey them and follow up on nonresponses.
  - Librarians generally inquire into user's motives only enough to assist them in their searches, not, for example, to ask them if their search was successful.
  - The impact of using the library is not immediately apparent to the user. Often users do not know how useful the information is until after they have completed the project or task.
  - LSTA is but one small funding stream among larger sources of support. This begs the question about whether new users are served better if the program is supported with: (1) federal funds alone, (2) state funds combined with federal funds, or (3) either of the first two in combination with local matching funds. These issues make it difficult to understand the impact of LSTA funds alone on services.

### *Conclusion*

Henderson's final comments focused on balancing national, state, and local needs for data collection. She indicated that there is flexibility in LSTA to adapt the ACT's purposes to local needs: Henderson underscored the need for the library community to have a handful of nationwide indicators of LSTA effectiveness. Comparability and consistency of these indicators must be balanced with the changing role of libraries. Henderson challenged the participants to be careful what is measured, and whether it goes far enough in supporting the impact of the funding.

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Henderson concluded that we must have national-level reporting and evaluation, carefully planned and measured judiciously since future funding depends on it.

***Comments and Questions from Participants***

This presentation by Henderson inspired a lively discussion. The questions and answers and comments are summarized below.

***Question #1:*** How does the LSTA define underserved?

***Answer from Henderson:*** LSCA defined underserved by characteristics such as: difficulty in using libraries, people with disabilities, indicators of services to the elderly, people for whom English is a second language. The LSTA does not provide a laundry list of definitions or characteristics. Instead, the Act provides the flexibility for states to address those needs by giving them wide latitude to design services in a variety of ways, such as using electronic services to reach rural communities.

***Participant Comments on Definitions***

There might be a problem in defining who is underserved nationally and who is underserved in the state. Consider creating an evaluation template that states can adapt locally.

We need more than just state definitions of the underserved.

***Henderson's comments:***

We need meaningful reporting on what has happened as a result of improved services to the underserved, regardless of how it is defined. Technology can help serve the underserved. We also need to focus on evaluating the service itself rather than identifying the subgroups that use it.

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**Question #2:** What about thinking about the underserved this way: all people have access to a specific set of services so we should report on the services as a whole. Can we consider identifying national program effectiveness and index successful programs (as determined through evaluation) by congressional district? Would a national document that defines access for all people for these services work?

**Answer from Henderson:** How are you showing progress and how are you continuing to show progress over time? We cannot just involve new users; we must think about improvements for all users.

**Question from Henderson directed to the participants:** How do we provide better tracking of exact amounts we are spending to support and subsidize access, such as telecommunications and hardware costs?

**Answer:** Maybe these costs can only be identified or collected at the state level through the state library agency, not by the local library receiving the services. Perhaps we can capture costs by sampling state library agencies.

### ***Final Participant Comments***

We should be reminded that improving access to electronic services is one of *many* ways to improve services to the underserved.

Technology is not always the answer to serving the underserved. For example, screen displays with graphics are problems for the visually impaired.

In response to a question about whether LSTA encourages participation from all types of libraries (e.g., academic, public, school), Henderson replied that there was an explicit recognition that Congress was encouraging that.

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## Telecommunication Rates—Update and Impact

*Linda Roberts and Martha Hogerty*

**Linda Roberts, Director, Office of Educational Technology at the Department of Education**, updated the participants on the new Telecommunications Act of 1996 and its impact. Roberts summarized her message to the audience: the education, library, and museum communities are all in this world of education together. Our biggest challenge, she indicated, is to bring the world of information (books and on-line resources) into the hearts and minds of every person in this country.

In her update, Roberts indicated that the purpose of the Act is to make access to telecommunication services affordable for every community in America through the E-rate, a universal service funds subsidy. The Act affects entire communities by helping them build an infrastructure for services and use the infrastructure to gain access to the content and services they need.

Roberts discussed the guiding principles from which the Department of Education worked in giving advice to the Federal Communications Commission (FCC) about how the Act should be implemented. The first principle was that there would be a range of discounts, from 20 to 90 percent. The second principle recognized the need to educate schools, communities, and states about competitive bidding. The third principle is that the E-rate must make a difference. Roberts noted the education and library communities must be clear about the goals of the program and the benefits to learners of all ages (formal and informal, and lifelong learning), including distance learning opportunities, reading, etc.

In order to reflect the interests of all entities affected by the Act, the Department of Education consulted with librarians, cable companies, school districts, state education agencies, and intermediate service companies. They learned that one size

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does not fit all. Therefore, the worse mistake they could have made was to come up with a template that would apply to everyone. Roberts identified two of the challenges inherent in implementation: (1) different ways to consider populations in need, and (2) who gets the services—individual school districts or combinations of school districts; individual schools or individual libraries.

Roberts concluded her presentation by sharing an experience that illustrates technology is for everyone, not just for the “enlightened.” On a recent trip to Seattle, Roberts visited a public library that was located in the High Point Public Housing Project. The librarian, Erica Sternin, was the expert on technology, as well as teacher, social worker, and community advisor. The library is the center of the community for children and for their parents and is in full use during operating hours. Young and old use the technology and sometimes the library becomes so full that it becomes necessary to lock the door. Through a grant from Microsoft, the whole library also has five multi-media computers, typically surrounded and used by several children at one time. They were reading, writing, and, most importantly, learning and getting ready for their futures. The library offers an oasis from the surrounding community and an opportunity for children to learn in a safe, nurturing environment.

In order to see a copy of the Working Group report on how the Telecommunications Act should be implemented, see ED, Office of Educational Technology Web site: [www.ed.gov/tech](http://www.ed.gov/tech).

One participant asked whether Roberts thought unfiltered access to the Internet for children was a threat to the E-rate. Roberts responded that the Internet was not yet a threat to the E-rate, but it could become an issue with some of the members of Congress. Most schools do provide some filtered access.

**Martha Hogerty, Public Counsel, Jefferson City, Missouri,** is an advocate for the public before the Missouri Utilities

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Commission and the courts. Hogerty discussed the specifics of the Telecommunications Act including governance and board structure. From her position as an advocate, Hogerty ensures that consumers are treated fairly and they have just and reasonable rates.

Hogerty summarized some of the main provisions of the Telecommunications Act. The Act permits competition in local telephone monopoly, which eventually will help create a telecommunications network throughout the country. Second, the Act codifies universal service and promises consumers lower rates and better services. Third, the Act permits assistance to high cost areas and low-income consumers. Finally, the Act includes a \$2.25 billion annual program for schools and libraries to purchase telecommunication services, Internet access, and internal connections at discounts from 20 to 90 percent.

### *Structure for Implementation*

The FCC determined that the National Exchange Carriers Association (NECA), which currently administers universal service funds, will be the temporary administrator of the universal service funds. An advisory committee will recommend that a neutral third-party administration be established on a permanent basis. Goals of the program are to be: (1) technologically neutral, (2) competitively neutral, and (3) efficient, i.e., satisfy the need for fiscal responsibility without micromanaging schools and libraries.

The first meeting of the Universal Service Administrative Corporation (USAC) board (board of directors of 17 representatives including three school members, one library representative, one rural health care member, one low-income member, one state regulator, and one consumer advocate) was September 22, at which time the board named the service member representative for the schools and library corporation.

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This board of schools and libraries is responsible for administration, Web sites, outreach, reviewing bills, doing audits.

Hogerty provided a recent update on implementation activities. The FCC issued notice seeking comments as to whether first-come-first-served approach to reviewing applications for the rate subsidy should be altered or if there should be a window of opportunity where everyone is on equal footing. In addition, the FCC asked for comments on aggregation proposals that were due September 25. Hogerty concluded her comments by stating that the goal is to set up a system so consumers can receive best rates that will work for the whole. Everyone involved wants this program to be a success.

***Participant Questions***

***Question:*** What is the status of the Southwestern Bell case?

***Answer from Hogerty:*** Southwestern Bell challenged the Telecommunications Act in federal district court in Texas on constitutional grounds. They are currently waiting for a decision from the court.

***Question:*** What has to be included over next three months and presented to the library community in order for this program to begin on Jan. 1? What odds are you giving that it will actually start on Jan. 1?

***Answer from Hogerty:*** The boards have been set up, which is a hopeful sign. FCC and others are committed to getting things running on Jan. 1.

***Question:*** What group is in charge of producing the final application?

***Answer from Hogerty:*** The board under the USAC board (school and library board) will produce the application.

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## SMALL GROUP REPORTS

### Final Reports and Recommendations from the Small Group Discussions

Each of the four groups discussed and made recommendations for a specific set of LSTA objectives.

**Group 1: LSTA Objective—Establish or enhance electronic linkages among and between libraries; link libraries electronically with education, social, or information services; encourage libraries in different areas, and encourage different types of libraries to establish consortia and share resources.**

**Tom Sloan, Chair; Gerry Rowland, Recorder**

Group 1 recommended a framework for identifying national and state goals that are responsive to the LSTA and to Congress. The specific framework and examples are provided below.

### Data Collection Needs: Collecting National and State Data

Group 1 discussed the need for reporting and collecting both national and state data. The group concluded that there was a need to establish national goals developed by the library community (e.g., professional library associations, etc.). Each state will then develop measurable indicators based on these national goals. National goals are voluntary, like Goals 2000, but give the library community leverage with Congress and satisfy requirements of LSTA. States can then demonstrate how their indicators meet national goals, or, based on state



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plans, identify additional needs or priorities not included in the national goals.

Examples of national goals and state indicators are provided that relate specifically to LSTA objectives.

*Example #1:*

National Goal: Residents will have graphical access to the Internet through their local library. *State Indicators* might include:

1. Number of graphical terminals
2. Number of graphical terminals per capita
3. Training of staff and customers

*Example #2:*

National Goal: Each resident will have access to holdings and resources to all libraries in the state. *State Indicators* might include:

1. All on union list of holdings
2. All on OCLC
3. Web-based union catalog
4. Z39.50 for all systems
5. Digitized content of unique materials
6. Training

*Example #3:*

National Goal: Each resident has access to educational, social, or information services and resources through the local library. *State Indicators* might include:

1. Library is a community information center (paper or electronic linkage)

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2. Hosting Web sites for other communication organizations
  3. Linking to local Web sites
  4. Providing transactional level services for others

*Example #4:*

National Goal: All libraries share resources to the benefit of library customers. *State Indicators* might include:

1. Electronic interlibrary loan
2. Sharing networks; infrastructure
3. Integrated Library Systems
4. Union List of Serials
5. Cooperative cataloging/acquisitions
6. Consortia access to commercial databases
7. Training

*Additional Comments from Group 1:*

1. State agencies should involve state data coordinators in evaluating LSTA.
2. State plans should include measurable objectives.
3. Sources for evaluating programs include "Tell It"; NCES publications, Public Libraries Association data book, state and local reports (demographic and economic reports), state data centers, state demographer; private contractors, library school students; local educational institutions; online and end user surveys, staff, etc.

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**Group 2: *LSTA Objective—Assisting libraries in accessing information through electronic networks and paying cost for libraries to acquire or share computer systems and telecommunications technologies.***

**Rod Wagner, Chair; Keith Lance, Recorder**

Group 2 identified six possible studies, two measurement methodologies, and two practical suggestions.

1. Develop studies through IMLS on the most common uses of LSTA funds.
2. Study of value, effects, efficiencies, impact, etc., of the leveraging of LSTA funding.
3. Study effects of electronic access to information on interlibrary loan and other services.
4. Develop methodologies for systematic observation, i.e., collecting anecdotal information, including national sampling. Capture results in a searchable Web-accessible format.
5. As a high priority, recommend that IMLS contract for a study of the return on investment of a public access terminal: (1) Internet access to free information sources, and (2) Added value—commercial or locally provided content.
6. Conduct parallel studies to determine the effect of technology use in libraries on other library functions (e.g., the relationship between circulation, interlibrary loan, and reading).
7. Assess the extent to which libraries engage in digitization of electronic content and finding tools.
8. Develop through IMLS templates or criteria to collect data and information from LSTA funded projects, including identified data elements.

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9. Address concerns that the evaluation process not overburden staff.
  10. Create a Web-accessible/searchable clearinghouse to identify studies addressing LSTA funded programs and projects and other related research.

**Group 3: LSTA Objective—Target library and information services to people of diverse geographic, cultural, and socioeconomic backgrounds emphasizing underserved urban and rural communities including children (from birth through age 17) from families with incomes below the poverty line.**

**Bridget Lamont, Chair; Mary Jo Lynch, Recorder**

Group 3 made recommendations in three areas: (1) philosophy, (2) starting points, and (3) approaches.

*Philosophy*

1. Acknowledge the value of libraries but understand we must determine how to communicate that value in a tangible and meaningful manner.
2. What do we need to know?
3. What do we need to learn: (1) ways to improve practice, (2) what happened as a result?

*Starting points*

1. IMLS content analysis of needs, goals, and objectives of the 55 state plans.
2. Survival statistics organized by district funded, then by themes.
3. Impact: people served and project outcomes.

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*Approaches*

1. Rely on state library agencies to identify common tools to evaluate programs and services.
2. States are in best position to define what underserved means.
3. Laud effective evaluation at state library agencies and at local level.
4. Acknowledge focus LSTA has given to evaluation.
5. Encourage training on evaluation methods at state and local levels.
6. National evaluation of what really works in thematic areas.

**Group 4: *LSTA Objective—Targeting library and information services to individuals with disabilities and people with limited functional literacy or information skills.***

**James Scheppke, Chair; Susan Paznekas, Recorder**

Group 4 provided specific recommendations for each area covered in LSTA. They first described their vision of services to these populations as equity of access to information.

The group's definitions of these populations follow:

- Persons with disabilities: blind/visually impaired, deaf/hard of hearing; mobility impaired/homebound; developmentally disabled; learning disabled, functionally disabled.
- Persons with limited literacy skills: English as-a-second language; lack of functional literacy; lack of work-related literacy skills.
- Persons with limited information skills: problems in formulating questions, searching for information; problems

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with effectively analyzing the information, and applying information.

The group's inventory of current measurement in these areas revealed that measures are very limited, of little relevance, or survey libraries, not library users. Current surveys of some relevance include NCES Public Library Survey, NCES State Library Agencies Survey, The Library of Congress Survey of National Library Services for the Blind Regional Libraries, NCES Integrated Postsecondary Education Data System (IPEDS), the National Household Education Survey (NHES), and the National Adult Literacy Survey.

*Data Collection Recommendations for  
Persons with Disabilities*

1. National survey of persons with disabilities in order to assess needs and barriers to their use of library services (possibly by including questions on the NHES).
2. National sample survey of libraries to assess level of services provided to persons with disabilities (possibly through NCES Fast Response Survey).
3. Use national survey methodologies to conduct surveys at the state level on this issue (possibly by including questions on the State Library Agencies Survey).

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*Data Collection Recommendations for Persons with Limited Skills Literacy*

1. Conduct the NCES National Adult Literacy Survey again incorporating library use questions.
2. Conduct NCES surveys at the state level (state library agencies and partners).
3. Followup State Library Agencies Surveys with state level assessments of library services, including adult literacy/family literacy services and services to preschoolers.
4. Analyze existing NCES National Adult Literacy survey data on library use.

*Data Collection Recommendations for Persons with Limited Information Skills*

1. Assess information competencies of library users.
2. Add questions to the NHES about information behaviors.
3. Assess how information provided by libraries affects people's lives (use anecdotal information collected by focus groups).

*General Recommendations*

1. Support use of template for state reports to IMLS on LSTA-funded projects; states would report exemplary projects in these areas and develop template.
2. Conduct thorough inventory of existing measurement activities that might have relevance to use of libraries by these populations.

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*Questions and Comments on Small Group Reports*

**Question:** What happens with these recommendations?

**Participant Comment:** They should feed into COSLA evaluation committee.

**Participant Comment:** Look at all possible funding mechanisms, not just one source such as IMLS.

**Participant Comment:** COSLA needs to share their document with ALA, Forum, etc., and with others for feedback.

**Closing Comments:** One participant suggested the group consider taking out the word “national,” and simply call them LSTA goals approved by the library profession. A Forum planning committee member commented that these recommendations will inform our national surveys and that excellent progress has been made.



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## Appendix A

### A STRONG WORKING PARTNERSHIP TOWARD QUALITY DATA: NCES AND THE LIBRARY COMMUNITIES

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September 15, 1997

I am very pleased to be with you this morning and to welcome you to the fifth annual Library and Information Services Forum. At the outset, I would like to thank the planning committee that developed the structure and content that brought this forum into focus. This was a joint effort among many offices and organizations including NCES, NCLIS, the Postsecondary and Library Institute in OERI, the Institute of Museum and Library Services, COSLA, and State Data Coordinators for the public library survey. It was coordinated and brought to life by a gentleman who has been doing this sort of thing for many years, Mr. John Lorenz. John, congratulations on a job well done.

In the five years that the Forum has been jointly sponsored by the Center and the National Commission on Libraries and Information Sciences, the Forum has become a focal point of the Center's Library Cooperative Program. The past four

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forums have focused on identifying emerging trends that were occurring in libraries and the data that were needed to address them. Last year's forum, for example, was concerned with issues surrounding the measurement of library programs that are targeted toward populations with special needs. Two other forums delved into data that were needed to assess the growth in the use of technology and the provision of electronic services. The outcomes of these previous meetings provided a framework for the consideration of new data elements by the various library working groups that are convened by NCES and for consideration by the Federal State Cooperative Systems Steering Committee for public libraries.

This year's forum is somewhat of a departure from previous forums. Rather than keying in on one specific issue area, it will focus on the data implications of a major new federal-state library and information services development initiative as provided for by the new Library Services and Technology Act (LSTA). The LSTA has two primary objectives: hastening the development of and strengthening electronic linkages between libraries, and improving information services both to persons having difficulty using a library and to underserved urban and rural communities. As I understand it, the LSTA is not just concerned with public libraries, but it also affords the opportunity for states to build networks and cooperative agreements among all types of libraries, that is, the full range of public libraries, academic libraries and school libraries.

To meet its objectives, the LSTA provides funds to state library agencies. State library agencies can expend the funds either directly or through subgrants. This money is not, 'free', however. State agencies are charged with devising a plan that describes how they will expend the funds to meet LSTA objectives. Further, in this era of accountability, states must decide how they will evaluate their programs to provide evidence that the state is making progress toward meeting its LSTA objectives.

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Each state plan will be unique in that it will reflect specific state interests, needs and priorities; and, the state's evaluation of progress mandated by the LSTA will most certainly be tied to the state's individual objectives as delineated in its state plan.

The urgency for assessing progress towards LSTA state grant objectives is reinforced at a national level by the Government Performance and Results Act (GPRA). This act makes it clear that continued federal funding of programs such as the LSTA will depend on evidence of progress toward meeting the objectives of the relevant federal legislation.

The Center's mission, on the other hand, is to collect, analyze, and disseminate statistics and other data related to education in the United States. Since some libraries are important components of educational institutions (i.e., academic libraries, and school libraries and media centers), and public and other libraries have an educational mission as well as a service mission, the Center has broadly interpreted its mission and has been collecting data on the status of libraries in the United States for many years. We have been collecting data on academic libraries since 1966 as part of our general higher education data collection; and we have regularly collected data on public libraries since the formation of the Federal State Cooperative System in 1988. In 1993 we surveyed school libraries and media centers; recently we have surveyed state library agencies and federal libraries; and we are currently planning a survey of library cooperatives. We have also looked at libraries from the perspective of users of libraries; that is, the parents, other adults, and children, through the Center's national household survey.

We have some recent estimates of just how far public libraries reach. From our National Household Education Survey (NHES) conducted in 1996, NCES has found that at least one individual in 65 percent of households in the Nation has used one or more library services in the year prior to the survey, and that 44 percent had used them in the last month. In addition, in

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those households with children, 61 percent had used at least one library service in the past month. While most people use libraries to borrow or return books or tapes, 18 percent reported using them to hear a lecture or to attend a story hour, and many reported using them to hear a lecture or to attend a story hour, and many reported using them to get information. This extraordinarily high use of public libraries is indicative of the significant role they play in American life.

For all of our data collection activities, NCES works with the appropriate communities to determine those data that are needed at the national level for reporting on current status and trends. Most of our data bases are developed to address long-standing issues of national concern as identified by our working groups and cooperatives. While we do have fast response surveys that address current 'hot topics', most of our surveys are intended to collect basic information that will stand the test of time and that has become extremely valuable as tools for looking at changes over time.

This is not to say that our basic databases do not change. As the phenomena we are measuring change, our surveys are modified to reflect these changes. In doing this, however, we do everything possible to maintain historical trends. For example, there have been radical changes in the accounting standards for non-profit higher education institutions. The Center has collected finance data on these schools for the past 20 years under the old accounting standards model. Now, however, recognizing that these new standards will govern finance reporting for many years to come, we are completely revising our finance survey for non-profit postsecondary institutions to conform to these new standards. At the same time, the Center is funding a study to develop a bridge between the old finance data and the new finance data to ensure that we can continue to report on changes in institution finances over time.

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Given our charge for providing consistent and reliable data over time, the national data that NCES collects cannot, and should not, be driven by solely program evaluation needs. As you are well aware, legislative programs are somewhat transitory in nature. What is important in one legislative session or in one administration is not necessarily a priority as political winds change. Thus, as exciting and significant as the LSTA is to the entire library community, we must be very careful not to fall into the abyss of substituting basic statistics on libraries and school media centers for program-specific data.

I am delighted to report, however, that all is not lost. As Mary Jo Lynch points out in her paper that you received as part of your materials for this meeting, some of the data the Center already collects on public libraries, state libraries, and academic libraries are quite relevant to the objectives of the LSTA. Several items that were added to the 1997 public library survey, for instance, are concerned with electronic services provided by libraries. Last week Tom Sloan of Delaware, with the support of NCES and NCLIS, organized a special meeting of the data definitions subcommittee of the (Federal State Cooperative System). The purpose of this meeting was to identify additional data items on electronic services and outcomes that might be added to the public library survey. I am sure you will hear more about these matters in the next two days. Since the public library survey is a universe survey, data collected through this survey are available at a state level and will prove very useful in establishing baselines against which progress can be measured.

It is a happy coincidence that NCES' library statistics program collect information from public libraries, academic libraries, and school libraries and media centers, all the types of libraries mentioned in the LSTA. It is also fortunate that the public library and academic library collections are universe surveys and are done sufficiently often to provide good measures of change as the LSTA is implemented. In the case of the school library and media center survey, it is a sample survey, but the

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sample is a state-level sample so state estimates are possible. It is also done on a periodic basis, about once every 5 years which coincides quite well with the 5 year cycle of the LSTA. We plan the next school library media center survey for 1999.

Like the public library survey, each of the other library surveys in NCES' portfolio has begun to include items on the availability of technology in the library, the electronic services offered by libraries, and, in a limited way, information on the extent of usage of these services. These items are beginning to appear on these surveys because you, the library community, has recognized the emerging importance of technology to the way the libraries do business, a phenomenon that is likely to grow in importance as technology advances.

Further, the survey of library cooperatives that NCES has been planning since 1994 will provide a key national and state indicator of progress toward meeting the LSTA objective of linking libraries by monitoring changes both in the number and types of library cooperatives and in the number and types of the libraries they serve.

Identifying individual data elements is not the only tool available for looking at progress in meeting LSTA objectives. Analyzing the data that are collected on libraries in conjunction with other data sets is another strategy for developing national and state indicators. NCES, for example, is supporting a study to map public libraries service areas and to geocode library buildings. Once this activity is completed, a merged data file containing the mapping data, the public library survey data and Census data will be created. This file will allow analysts to relate the economic and demographic characteristics of the population served by a library to the characteristics and service measures of that library. To the extent that Census data contain the population characteristics that are relevant to the LSTA, it will be possible to assess how services to the populations mentioned in the act change as the LSTA is implemented. This type of analysis, while of interest at the national level, will be

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invaluable to the states since states will know the level of LSTA funding received by each library in the state and how the observed changes fit into the state plan.

Additionally, the Census Bureau, at the behest of NCES, has already added an SMSA code the public library survey data file so services provided by libraries in central cities, suburban areas, and rural locations can be studied.

Libraries in the United States are on the edge of a revolution both in the types of services they provide and in the way these services are provided. I suspect that the LSTA will help libraries move more quickly into an electronic future. Your challenge over the next two days is to chart out strategies for capturing this movement through our national data collections and through creative uses of the these data. We at NCES look forward to working cooperatively with you on this exciting and important undertaking.





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## **Appendix B**

### **ASSESSING THE PROGRESS TOWARDS LSTA'S PURPOSES: HOW THE NCES LIBRARY SURVEYS CAN HELP**

Mary Jo Lynch  
Director, Office for Research Statistics  
American Library Association

NCES/NCLLIS Policy Forum September 15-16, 1997

#### **I. Introduction**

The Library Services and Technology Act (LSTA) begins a new era in federal funding for library services in this country. Funds now go to states for use on behalf of all libraries and are to be used on any or all of six purposes according to a plan devised by each state. Sharing resources and using networked information are strongly encouraged. At the same time, there is a strong focus on assessment of progress, largely due to the Government Performance and Results Act (GPRA) which takes effect in FY98. State library agencies must not only change from the purposes and procedures of the state grant program of the Library Services and Construction Act (LSCA) to those of LSTA but must also figure out how to assess progress towards the LSTA state grant objectives included in their state plans. How can this be done in a way that respects state sovereignty, makes sense nationally, and takes advantage of existing systems for collecting data? This paper describes how to do that by using the library surveys already in place at the National Center for Education Statistics (NCES). I'll be the first to admit that these surveys won't do it all -- at least with the current content and existing time constraints. But they provide a solid base to build on and change is always possible.

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It is important to remember that NCES does not do these surveys in a vacuum. For each one there is an advisory committee of librarians and NCES has a strong commitment to providing data for policy purposes. An important result of the Forum could be the recommendation of change in one or more of the NCES library surveys. The rest of the paper describes those existing surveys and how they relate to LSTA state grant objectives. Attached to this paper are several useful documents:

1. Section 231 of LSTA which lists objectives of the grants to states.
2. Abstract of study by Christine Koontz funded by OERI for \$422,559
3. FSCS data items 44-49.
4. IPEDS Academic Libraries Survey, Part G, Electronic Services, 1996.
5. Table 6-1 from *The Condition of Education, 1997*.

Also useful are several other enclosures sent to Forum Participants:

- An eight page pamphlet describing the six library surveys in the NCES Library Statistics Cooperative Program.<sup>1</sup>
- An article by Mark Smith and Gerry Rowland (“To Boldly Go”) that describes work on the measurement of electronic services by the Federal-State Cooperative System for Public Library Data (FSCS).<sup>2</sup>

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1 *Library Statistics Cooperative Program*. NCES 97-407. Prepared for the National Center for Education Statistics by the U.S. National Commission on Libraries and Information Science. Washington, DC: U.S. Department of Education, 1997.

2 Smith, Mark and Gerry Rowland. “To Boldly Go: Searching for Output Measures for Electronic Services.” *Public Libraries*. May/June 1997:168-172.

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## II. Federal-State Cooperative System for Public Library Data (FSCS)

Several of the NCES surveys described in the pamphlet on the Library Statistics Cooperative Program will be mentioned in this paper but the one that merits attention first is the public libraries survey popularly known as FSCS. Although the brochure shows it as one of six, it is really the most important for our purposes. FSCS is:

- collected electronically (diskette, FTP, WWW).
- heavily based in the states.
- highly dependent on the work of 50 state data coordinators.
- annual.
- already working on measuring electronic services.
- already working on analysis of community characteristics.

Unlike any other NCES library survey, the data for FSCS are collected by the states using their own forms -- not forms created by NCES. The state forms may ask for other items, as needed by an individual state, but they all contain a core set of items -- 49 at this writing --- agreed upon by the states through the 50 state data coordinators (SDCs). Those 50 meet annually to discuss and improve FSCS and elect five members to a steering committee that involves NCES, the National Commission on Libraries and Information Services (NCLIS), and others but is always chaired by an SDC. One of the major functions of the Steering Committee and the annual meeting is to consider changes, deletions, or additions to the list of items all states will collect from public libraries. The article by Smith and Rowland describes work in progress to identify measures for electronic services. That work will eventually result in ways to measure progress toward at least some of objectives 1A-1E of the LSTA grants to states. Before discussing data for those

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objectives further, let us turn briefly to objective 2, where FSCS also has something to offer.

### **III. Targeting Services to Specific Groups**

Objective 2 involves targeting services to a number of different groups of people. Although some of those groups will be hard to define, many of them have characteristics regularly counted by the Census of Population. Linking census data to library service areas can now be accomplished using the software known as Geographic Information Systems (GIS). This has been done successfully by individual libraries in making decisions about branch locations<sup>3</sup> and is now being used in 93 cities by Dr. Christine Koontz in work sponsored by the OERI Institute on Postsecondary Education, Libraries, and Lifelong Learning. Attachment 2 describes this project. Koontz used the FSCS file of library outlets in the early stages of her work. Key to the use of GIS is “geocoding” the library location. It is relatively easy to geocode the address of a single library outlet but harder to define the market area around that address. The Koontz project will solve that problem for outlets in her study.

The FSCS outlet file has also been used by Koontz’s colleague, Dean Jue, to help ALA’s Office for Information Technology Policy (OITP) identify library outlets serving low income people in connection with ALA’s testimony to the FCC on implementing universal service discounts. For the OITP project, Dean Jue and Andrew Magpantay (OITP Director) are experimenting with different ways of determining which library outlets in the nation serve areas of high poverty and are therefore entitled to special discounts. The FSCS Metropolitan State Code -- “central city,” “metropolitan area - not central city,” “not metropolitan area” -- has been a key factor in that work.

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3 Ottensmann, John R. “Using Geographic Information Systems to Analyze Library Utilization.” *Library Quarterly*. January 1997:24-49.

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Both of the projects just described are based on library outlets (the 8,879 centrals and 7,025 branches as of the 1994 FSCS report<sup>4</sup>). But FSCS gathers those 49 data items from 8,921 public library “administrative entities” where the appropriate geographic factor is not address but legal service area -- defined as “the geographic area for which a public library has been established to offer services and from which (or on behalf of which) the library derives income, plus any areas served under contract for which the library is the primary service provider.” Recently the FSCS Steering Committee decided to enhance the usefulness of the FSCS data file by providing geocodes for each of the 8,921 public library “administrative entities,” 20% of which have multiple outlets and many of which include non-standard political jurisdictions in their “legal service area”. This would enable anyone with appropriate software and skill to produce maps showing demographic characteristics of the people potentially or actually served by a public library administrative entity. NCES recently contracted with Westat to provide those codes. That project is well underway at this writing and is on the Forum agenda. Once this project is completed, the demographics of public library use can be analyzed by legal service area nationwide. All the tools will be available: GIS software, FSCS boundary and data files and Census data files.

#### **IV. Sharing**

It seems to me that the first five objectives of LSTA grants to states are highly interrelated and that the relationships focus on two themes:

- electronic linkages (mentioned in 1A-1C and implied in 1E).

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*4 Public Libraries in the United States: 1994.* NCES 96-213. Washington, D.C.: U.S. Department of Education, 1997.

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- sharing (mentioned in 1D and 1E -- implied in 1A).

How can NCES surveys help to measure the extent to which libraries share and the extent to which they offer electronic services? Sharing is something libraries have been doing for a long time. The most widely known manifestation of that sharing is interlibrary loan -- a system which began long before librarians began using computers. The annual figures for interlibrary loan in public libraries collected by FSCS and the biennial figures for interlibrary loan in academic libraries collected by the Integrated Postsecondary Education Data System (IPEDS) show increases in the electronic era. Data on interlibrary loan is already a regular component of NCES library surveys and will no doubt be continued. But other dimensions of sharing are harder to measure. The pamphlet on the Library Statistics Cooperative Program notes that a survey of library cooperatives is in progress now. The Advisory Committee for that survey meets the week before the Forum to consider results of the pretest of the survey instrument. LSTA will be a factor as the Advisory Committee makes recommendations for the final questionnaire.

NCES did earlier surveys of the topic in 1978 and in 1986. For those surveys, as for the current attempt, a major problem is establishing a valid and reliable universe file, i.e. a list of existing consortia/cooperatives/networks that meet a common definition. Once completed, however, the current survey will be a useful benchmark especially for objective 1D. The current schedule calls for repetition every 5 years but it may need to be done more often.

The annual State Library Agency survey is likely to be even more useful in measuring the extent of electronic sharing. Three tables in the latest report<sup>5</sup> look important in that regard:

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*5 State Library Agencies, Fiscal Year 1995.* NCES 97-434. Washington, D.C.: U.S. Department of Education, 1997.

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- Table 3, “Electronic network functions supported at the state level by state library agencies. . .” shows yes or no responses by state to the following nine items:

**Electronic network functions supported at the state level**

- Electronic network planning or monitoring
- Electronic network operation

**Database development**

- Bibliographic data bases
- Full text or data files

**Library access to the Internet**

- Training or consultation for participation
- Subsidy for participation
- Providing equipment
- Mounting directories, data bases, or online catalogs
- Managing gophers, file servers, bulletin boards, or listservs

Currently all states report “Yes” for the first item and many more report “Yes” than “No” on the other items. Clearly state library agencies are already active in this arena. In future years, Table 3 can be used to monitor these important functions -- or changed to include others as the technology for sharing changes.

- Table 12c, “Number and percentage distribution of budgeted full-time equivalent (FTE) positions in automation/electronic network development in state library agencies,” shows for each state the number of “Librarians with ALA-MLS,” “Other Professionals,” and “Other paid staff” involved in those activities. This may need to be changed with the new focus of LSTA.

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- Table 25d, which has covered LSCA Title III expenditures (library cooperation) will obviously have to be changed along with 25a, b, and c which covered other aspects of LSCA. The state library agency survey has now been conducted for three years (1994, 95, 96) when LSCA was in place. The three reports provide a solid base from which to monitor the changes that will occur in state library agencies because of LSTA. The Advisory Committee for the State Library Agencies survey meets the week before the September Forum and we can expect a report on their work along those lines.

## V. Electronic Services

The state library agency survey captures the statewide dimensions of electronic services but how these services reach citizens can be seen best in the surveys of public and academic and school libraries. As was indicated earlier, the FSCS is already working on measurement of electronic service delivery. The article by Smith and Rowland indicates that this is not easy and is far from finished. The FSCS Steering Committee struggled mightily before adding the five items shown on Attachment 3 to the set of items states were asked to collect from public libraries and report to NCES. The first reports that include these items are due in NCES by the end of August 1997. Already, experience with those data items indicates that there may be a need to clarify the definitions. Part of the problem is that the same database may be available several different ways as described in Carol Tenopir's first annual survey of "The Data Dealers."<sup>6</sup> The Steering Committee is working on those data items and also considering the additional measures as described by Smith and Rowland. A special meeting of the FSCS definitions sub-committee will take place

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6 Tenopir, Carol and Jeff Barry. "The Data Dealers." *Library Journal*. May 15, 1997:28-36.



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a week before the September Forum and it is hoped that a progress report will be available then.

Once those FSCS electronic measures are part of the annual data collection it will be possible to use some of them to assess progress towards several LSTA objectives. Because FSCS data are collected and compiled at the state level before they are sent to NCES, there is no need for a state to wait for the national report which admittedly comes out long after data are collected. These data can be used at the state level at a much earlier date. Because all states use the same items and definitions, reports made to the Institute of Museum and Library Services (IMLS) and/or to Congress will present comparable data. There is much work to be done but FSCS is well on the way to providing the metrics for measuring the results of LSTA for electronic services in public libraries.

### *Academic Libraries*

What about academic libraries -- those in two year and four year colleges and graduate universities? The NCES survey covering academic libraries is one of nine surveys that comprise the Integrated Postsecondary Education Data Surveys (IPEDS). It will be less useful than FSCS because it is:

- biennial.
- imbedded in the IPEDS -- a complex system involving state higher education agencies and campus institutional research officers.
- not really “owned” by the academic library community.

For those reasons and others the IPEDS Academic Libraries Survey (ALS) will probably not be as useful as FSCS in assessing progress toward LSTA objectives. However, there is good news as well in that:

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- the FSCS State Data Coordinator in each of 21 states is also the IPEDS Library Representative (in other states the library representative is in an academic library or cooperative).
  - the academic library sector is way ahead of other parts of the library community in making full use of electronic services. A status report on this topic was published by ALA in 1996.<sup>7</sup>

The most recent published report of the IPEDS ALS is dated 1992,<sup>8</sup> but a 1994 report is expected by the end of 1997. Neither has any useful data on electronic services, but the 1996 survey had a new section (G) focusing on electronic services -- see attachment 4. Several items in Section G could be used to assess progress toward LSTA Objectives. Although NCES collects these data only every two years, a state could easily use Section G to collect in other years. (Note: attachment 4 is a revision of Section G for the 1998 survey. It has not yet been approved by OMB.)

Results of Section G will be quite different from those of the new FSCS items on electronic services in that they measure capacity for service, not service volume. Measuring service volume has been discussed many times by the Advisory Committee for the Academic Libraries Survey. For many reasons, however, the Committee has not moved in the direction taken by FSCS and seems unlikely to do so in the near future.

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7 Lynch, Mary Jo. *Electronic Services in Academic Libraries*. Chicago: American Library Association, Office for Research and Statistics, 1996

8 *Academic Libraries: 1992*. NCES 95-031. Washington, D.C.: U.S. Department of Education, 1994.

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## *School Library Media Centers*

The pamphlet on the Library Statistics Cooperative Program shows that NCES collects data from school library media centers every five years, but the most recent full report covers data for 1985-86.<sup>9</sup> A small amount of data, primarily on LMC staffing, was collected in 1990-91 as part of a school survey and described in a separate report.<sup>10</sup> Results from the most recent survey of school library media centers, done in 1993-94, have not yet been fully reported at this writing although data on staffing items were included in a general report on the 1993-94 Schools and Staffing Survey (SASS),<sup>11</sup> and results for items on electronic services were included in *The Condition of Education 1997*.<sup>12</sup> Table 6-1 from that volume is Attachment 5 to this paper. When full results of the 93-94 survey are released, they will show results by states. This will be done for public schools only as the sample was not large enough to allow reporting for private schools. It seems unlikely that NCES data on school library media centers will be useful in measuring progress on LSTA objectives because the Library Media Center survey is:

- a sample survey.
- conducted every five years.

States will need to find another way to monitor this sector of the library community. A small committee has just been formed to help NCES revise the School Library Media Center

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9 *Statistics of Public and Private School Library Media Centers, 1985-86 (with historical comparisons from 1958-1985)*. Washington, D.C.: U.S. Department of Education, 1987.

10 *School Library Media Centers in the United States: 1990-91*. NCES 94-326. Washington, D.C.: U.S. Department of Education, 1994.

11 *SASS by State: 1993-94 Schools and Staffing Survey: Selected State Results*. NCES 96-312. Washington, D.C.: U.S. Department of Education, 1994.

12 *The Condition of Education, 1997*. NCES 97-388. Washington, D.C.: U.S. Department of Education, 1997.

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questionnaire used in 1993-94 for a survey in 1998-99. It seems likely that the technology items will be changed. Individual states may want to do their own surveys using this common set of data items.

## **VI. Conclusion**

NCES surveys are essential to the work of monitoring progress toward LSTA objectives for at least three reasons:

1. they already collect some of what is needed.
2. they can be changed to collect more.
3. they provide a common framework for other data collection efforts – national, regional, and state.

Because of the confluence of LSTA and GPRA, if the NCES Library Statistics Program did not exist, we would have to invent it. But it does exist. There is much work to be done and we have the tools to begin.

# To Boldly Go Searching for Output Measures for Electronic Services

Mark Smith and Gerry Rowland

Traditional output measures for library services do not address the volume of use of electronically stored and networked resources and services in libraries, and it is becoming critically important to identify new standard output measures that will. National efforts to formulate such measures have generated a good deal of thoughtful consideration of issues, but have failed to identify any usable output measures. This article reports on efforts by the Federal-State Cooperative System for Public Library Data to identify output measures for use of electronic resources, the ideas this process has generated, and the relative merits of various output measures for local use of electronic resources.

Identifying meaningful outputs to measure the use of electronic resources and networks by public library patrons is the holy grail of current library measurement and evaluation. As library services and collections migrate from traditional print-based resources to an electronic environment, such time-honored output measures as circulations per capita, reference transactions per capita, and title fill-rate, tell only part of the story of library use volume. But what new output measures for determining quantity and quality of library service will be adopted in the brave new world of electronically stored and networked information?

Since 1994, the Federal-State Cooperative System for Public Library Data (FSCS)—a joint project of the National Center for Education Statistics (NCES) and the United States National Commission on Libraries and Information Science (NCLIS)—has actively pursued a set of inputs and outputs to assess the access to and use of electronically stored and networked resources in public libraries. This article reports on the effort by FSCS to formulate nationally collected measures for electronic access during the last two years. To date, this effort has yielded a set of input measures that will be collected annually in all fifty states and has provided further groundwork information to facilitate the collection of output measures for electronic services. More important perhaps, the process has also evoked a thoughtful consideration of the type

of output measures needed to provide meaningful data and has identified some of the technical and procedural barriers to data collection.

## Current Status

At present there is minimal actual collection of output data on the use of electronic resources in public libraries; if they are being collected at all, that collection is occurring almost exclusively at the local level. Neither of the two entities that collect annual public library data on the national level—Public Library Data Service (PLDS) of the Public Library Association, and FSCS—are collecting output data for these services. The lack of output measures is generally acknowledged, however, and efforts are ongoing in several arenas to address the problem. For example, the Public Library Association is now updating its Public Library Development Program (PLDP) to include, among other things, new output measures for electronic services. The PLDP is responsible for a series of familiar and influential publications on library output measures, including *Output Measures for Public Libraries*, *Output Measures for Public Library Service to Children*, and *Output Measures and More: Planning and Evaluating Public Library Services for Young Adults*. The PLA ReVision Committee, chaired by Sandra Nelson, Assistant State Librarian of Tennessee, is directing the development of a new and improved PLDP.

Nor is much output data for the use of electronic resources being collected at the state library agency level. In a survey of state libraries conducted by the FSCS Steering Committee in January 1996, only four of the forty-three responding states indicated they collected output measures for electronic services from every public library in the state. Three states—Arizona, New Jersey, and Pennsylvania—track the number of reference questions answered by online database searches. Wyoming tracks the number of online searches and the number of databases accessed via a statewide server. A fifth state, Texas, asks its regional public library systems to track the number of Internet sessions occurring in those libraries whose connections were purchased in whole or in part with system

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funds. One other state, Maryland, responded that it is working toward identifying output measures that would link reference transactions to the use of electronic resources.

The well-known 1994 study by Professor Charles McClure, *Public Libraries and the Internet*, comes the closest of any study to date to an assessment of outputs for electronic services. The McClure study is based on responses from 1,148 of 1,495 public libraries surveyed nationwide (of a total of 8,929 public library entities in the United States). This study established a baseline set of data about the extent to which public libraries were connected to the Internet, what they paid for service, and how frequently they used it for staff and public services purposes. Professor McClure and Professor John Bertot are currently revising the survey on the basis of data from a more recent survey.

Although there is little national level data on outputs related to electronic services, input data is beginning to be collected. In addition to the McClure studies, FSCS has begun to collect and report a series of input data that will yield some numbers on the status of electronic resources and connectivity in every public library in the United States.

### **FSCS and the Search for Outputs for Electronic Use**

Since 1994, the FSCS Steering Committee has actively worked to develop output measures for public library use of electronic resources. The motivation for their interest is twofold. First, it arises from a recognition of the needs of policy makers and researchers to justify the role of and support for public library participation in delivering Internet and other related services to the public. Second, and perhaps more important, is the recognition that local libraries must begin measuring these services to continue to demonstrate productivity, and to justify the relevance of their role in the increasingly digitized information age.

The value of collecting these data through a national program such as FSCS is that common definitions can be applied, that the mechanism for universal collection (rather than a sample) is already in place, and that national benchmark data and normative standards can be derived. The downside, which has proven so far to override these

benefits, lies in the difficulty of universal automated collection over a variety of platforms and service delivery models.

In a series of meetings during 1994, the FSCS Steering Committee debated the possible inputs and outputs that might be used to measure these new services. The following outputs were considered and discarded.

#### **Number of Hours of Online Access**

This would measure the number of hours that patrons were connected to servers supported by the public library either at terminals in the library or from outside the library via the library's server. In addition to difficulty of collection, this measure was judged to be more responsive to such factors as novelty of the service. Further, their numbers would likely appear to actually decline as users became more sophisticated and efficient searchers.

#### **Number of Files Accessed**

Although somewhat analogous to traditional library outputs, in the online environment this measure would track every layer of menu to a relevant file, every graphic file on a home page, and many other files irrelevant to the information value of the items sought or found.

#### **Number of Hits**

In this usage, "hits" refers to the number of persons who access a home page, gopher, or other information server maintained by the library. Several problems were identified with this method of measuring electronic access, concerned mainly with the lack of any meaningful detail about what the person accessing the server actually used on that server, and what they found valuable. Indeed, this output would fail to provide any information that would lead to an assessment of the usefulness of the site to users.

#### **Number of Reference Questions Answered Using Electronic Resources**

Although a highly meaningful output, this measure cannot be consistently collected by automated means because reference, by definition, is the interaction of the patron with staff and does not imply unmediated access to the Internet workstation. Such a measure would thus rep-

resent a significant reporting burden for local public libraries.

#### **Number of Persons Using Electronic Resources**

This could be a desirable statistic, except that it is impossible to track electronically because a server can only distinguish discrete searches. It is also impossible to track by any means when the search is initiated by a remote user.

Finally, the FSCS Steering Committee agreed that the most meaningful and collectible output measure would be the number of online sessions. It should be noted that the measure does not capture in-library use of locally owned and mounted resources such as CD-ROMs. This measure was proposed to the states in late 1994 as follows:

**Number of Internet Sessions: Definition:** This is the number of times the Internet is accessed through a service provided either on site in the library or remotely through a service maintained by the library. This count should reflect each discrete initiation of a telnet or other TCP/IP-based connection and should not reflect the number of services accessed by patron or staff in a given session. If the library has access to e-mail only, report zero.

This measure failed to receive the approval of a majority of states and was not added to the FSCS collection. It seems to have failed because of uncertainty among the states about whether the figure would be technically collectible, whether it would result in comparably collected data nationally, and because it might impose an unfair burden of collection on already overworked public libraries.

On the same ballot, however, several input measures were approved by a majority of states and are now being collected nationally. These new questions ask if the library is connected to the Internet, if that access is for staff or for the public, the number of items in electronic format owned by the library, and the amount of money expended for electronic resources and access. When they are published in the summer of 1997, these data will be the most comprehensive indication of actual public library activity in this area. They will provide benchmark data against which the level of public library connectivity can be measured. Further, they will document

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the amount of public library resources being spent for library materials in electronic format and for access to electronically networked information.

### Meanwhile, We Still Need Outputs

The FSCS Steering Committee continued to investigate possible output measures for electronic services during 1995. At the FSCS workshop held during March 1996 in Washington, D.C., a three-person panel revisited the issue in hopes of developing a framework for consideration of new measures that could be added to the national collection. The panel was composed of Andrew Magpantay, director of the Office of Information Technology and Planning at the ALA Washington office, Jane Goodwin, coordinator of Planning and Evaluation at the Fairfax County (Va.) Public Library, and Denise Davis of the Maryland Department of Education Division of Library Development and Services.

The panel presentation began with Magpantay discussing the need for electronic services output as a basis of policy development in this area. Goodwin identified the measures she considered meaningful, both for what they say about use of such resources and for their relation to more traditional output measures. Davis identified and discussed the measures that are technically collectible.

Collectively, the panel identified the following potential output measures:

- Number of users of electronic resources
- Number of reference transactions using electronic resources
- Number of searches on a local server
- Number of searches on a remote server
- Proportion of time that such resources are in use
- Number of successful retrievals

Goodwin expressed her desire to push measurement into the realm of impact assessment. She identified the following impacts, which could measure the difference such resources make for users:

- Who are the users of the resources (demographic characteristics)
- Reasons for use of electronic resources

- The kinds of questions being answered with these resources
- Length of time of use by individual
- Length of wait (as an expression of demand and measure of frustration)
- Value of the resource as perceived by the user
- Level of enhancement to services resulting from use of the electronic resource

In her discussion of the technical challenges of collecting these data, Davis, who works with the Sailor Project (Maryland's statewide library information network), explored the idea of "locating the data collection activity." Davis identified four elements of electronic access—local users, local resources, remote users, and remote resources—and stated that each of these factors should be considered in developing output measures because each leads to considerations of where to site the data collection activity. For example, measuring the use of a CD-ROM by a patron in the library (local users accessing local resources) will probably mean collecting the data at either the workstation or the local area network (LAN) level. Measuring local patron use of remote resources via the Internet will require locating the data collection activity elsewhere, either at the router level, or at the Internet service provider (ISP) level, if access is purchased through an ISP.

Davis' insight about locating the data collection activity led FSCS to schematize the range of user-to-resource variations. The schematic indicates that there are actually only three such paths, as shown in figure 1.

Those configurations are: local users accessing local resources, remote users accessing local resources, and local users accessing remote resources. This analysis allows us to identify the possible locations of the data collection activity as shown by the triangles in figure 1.

Finally, using this schematic, it is also possible to identify where the most problematic collection activity occurs. Local use of local resources can be ascertained fairly easily by using software counters. Remote users accessing local resources (i.e., when a remote user accesses a library's home page) can also be easily captured via the tracking capabilities inherent to hypertext transfer protocol (http) software. Finally, local user access to remote resources is more easily tracked when the router is in the library and the data collection activity can be

sited locally. In these cases, the tracking can be done via LAN software counters or workstation access counters.

Only in the case of libraries that purchase access from an Internet service provider does data collection become truly problematic. If the data collection activity is located beyond the control of library staff, the library will have to rely on the ISP to provide the data. Although technically possible, the experience in Texas and elsewhere indicates that ISPs are often reluctant to provide the data, or charge extra to track the library's use data, or even refuse to provide it altogether. Obviously, the more detailed the information needed, the harder it is to get it from the ISP. Unfortunately, library Internet access via an ISP is a common arrangement, perhaps even the most common mode of access.

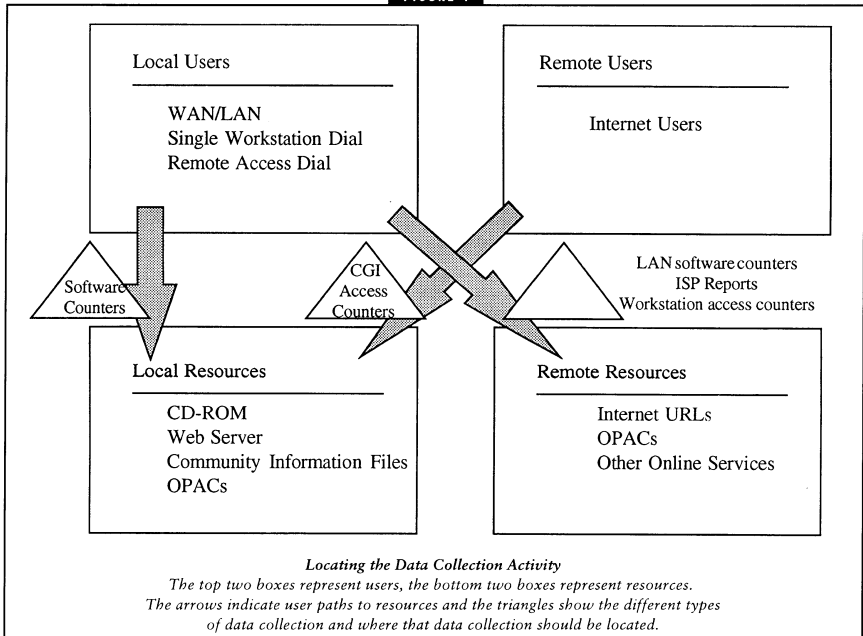
In the end, the panel discussion did not lead to the adoption of a new FSCS data element to capture outputs for electronic use. The data coordinators representing the states decided that too many difficulties in collecting meaningful data at the state and federal level currently exist.

### The Compelling Need to Count Hits

Since 1994 when the FSCS Steering Committee opted not to pursue a data element for electronic access based on hits against electronic resources, the Internet and in particular the World Wide Web have taken the information world by storm. Users increasingly find their information on the Web, and use of the Web is now being counted using the concept of hits.

For example, the Netscape Communications Company, which developed the product that allows millions to gain easy access to the Web, announced in a June 16, 1996 press release that it recorded ten billion hits against its Web site in the previous two years. Several million visitors access the Netscape site on the Internet each day, recording more than eighty million hits daily. Contrast this information with public library data. In 1993, the year for which the most recent data are available, there were approximately sixteen million visits to public libraries per week, and approximately thirty-two million items circulated per week. Total hits per week at Netscape are eight times the total weekly circulation

FIGURE 1



for all public libraries in the United States, and this at just one of the 225,000 Web sites identified by the Alta Vista Internet search engine from Digital Corporation.

Granted, Netscape hits are from Internet users worldwide, and there is a difference between hits against a Web site and circulations of materials. The sheer volume of Internet use is what catches the eye: can it be possible that one Internet site does eight times the business of all the public libraries in the United States? If so, we are losing the numbers game, but we are also doing far more than we are counting. If we counted all the hits against electronic databases by library users, our usage counts would increase dramatically.

FSCS may be unable to establish electronic access output measures for several years. The procedures for adding new data elements are very deliberate to

ensure that only quality data are collected. There is no reason, however, why local libraries cannot begin counting and publicizing electronic usage statistics. Many, including most state library agencies, already post the number of hits against their Web sites. Using Denise Davis's model as a guide to locating the collection activity, two output measures emerge:

**Proposed Measure 1: Hits Against Local Electronic Resources by Local and Remote Users.** Electronic resources are those resources stored in or accessible via computer. Local electronic resources may include, but are not limited to, OPACs, CD-ROM reference tools, Web servers, or community information files.

**Proposed Measure 2: Hits Against Remote Electronic Resources by Local Users.** This is the number of times local

library users query online resources located at another library, another Internet server, or a remote electronic database available through dial-up access. Local users gain access to the electronic resources through the computing and telecommunications facilities provided by the local library.

Counting hits is standard practice on the Internet. Access counters are commonly used for assessing the volume of use at Internet sites. On the Internet, it is acceptable to count all hits, regardless of the success of the query. The same principle can be applied to library data collection.

Public libraries regularly serve more than 60 percent of the population of the United States. According to a recent CommerceNet/Nielsen Internet Demographics Survey (<http://www.nielsenmedia.com/whatsnew/excum2.htm>), approximately 11 percent of the nonu-

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lation of the United States uses the Internet. More than two hundred million Americans still need to use their public library to access electronic information. Public libraries are rapidly moving to the Internet. In Iowa, for example, 175 public libraries have Internet access, and more than 120 will have access in the near future. If we are to continue to provide this electronic service, we will need to document its use. Counting hits against electronic resources will document electronic library use.

### Conclusion

FSCS efforts to develop national measures of electronic access have not produced a standard output measure. These efforts have, however, provoked a good deal of consideration of the need for measures, which measures are meaningful, and the technical obstacles to collection. The partners in the FSCS project—

NCES, NCLIS, and the state library agencies—have acknowledged the inevitability of the need for output measures for electronic access and have directed the FSCS Steering Committee to continue to investigate possible outputs. Also, the Public Library Development Project is now working to include electronic outputs.

Until electronic resource output measures are established, libraries wishing to measure volume of access will have to develop their own measures. Among possible outputs, counting hits may be the most collectible and meaningful measure. Local collection will allow libraries to gather data tailored to support local planning, budgeting, and public relations needs. Finally, local collection allows libraries to gather the data by any means necessary. Preferably, and in most cases, that will be by automated means. In some limited cases, however, libraries may have to resort to measuring their outputs in the electronic age with a piece of paper and a pencil. ■

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. *Public Libraries*, May/June, Vol. 36, No. 3, ISSN 0163-5506, 1997, pp. 168-172.



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**Appendix D**

**USING QUALITATIVE INFORMATION  
IN A QUANTITATIVE ENVIRONMENT**

W. David Penniman  
University of Tennessee

LIS Policy Forum  
September 15, 1997

**Using  
Qualitative Information  
in a  
Quantitative Environment**

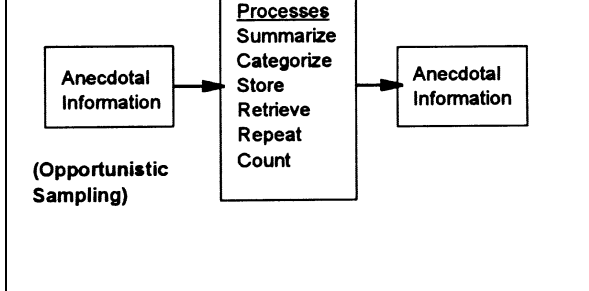
**W. David Penniman  
University of Tennessee**

**LIS Policy Forum  
September 15, 1997**

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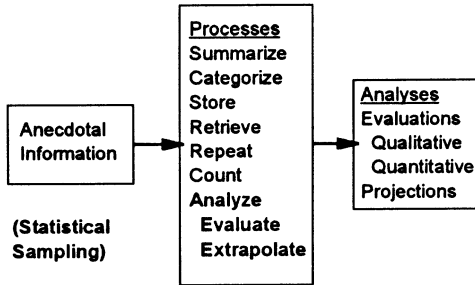
## Anecdotes In -- Anecdotes Out



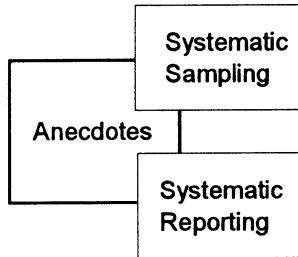
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## Anecdotes In -- Analyses Out



## Bringing Systematic Research Methodology to the Qualitative World of Anecdotes



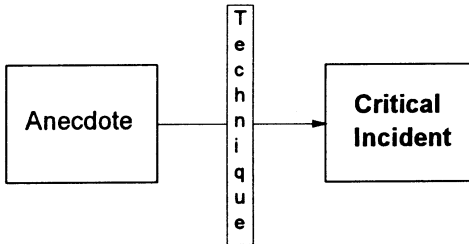
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## Suggestions for Systematic Sampling

- Collect anecdotes via a scheme  
NOT OPPORTUNISTICALLY
- Select a scheme that:
  - satisfies purely random sampling requirements (or other sampling technique that allows for population estimation)
  - allows for anecdotes or "incidents" that report little or no positive outcomes
  - conservatively adjusts for anomalous anecdotes
  - is conservative regarding non-respondents

## Systematic Reporting (From Anecdote to "Critical Incident")



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## **The Critical Incident Technique as a Method of Data Collection**

- **Roots are over 100 years old, but was formally an outgrowth of the Aviation Psychology Program of the U.S. Air Force in WWII.**
- **Based on reliable and comprehensive accounts of events of significance by competent observers**
- **Led to systematic tabulations of what people did in real situations and what the results were**

## **What is a Critical Incident?**

- **An INCIDENT is an observable activity that is complete enough in itself to make inferences and predictions about the system being observed**
- **For an incident to be CRITICAL it should occur in a situation where the purpose or intent is clear and the consequences are definite enough to leave little doubt regarding the effects**

Flanagan, 1954, p. 327

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## **Steps in the Critical Incidence Technique**

- Determine the general objective of collecting incidents
- Develop systematic plans for collecting factual incidents
- Collect data in the incident in as objective and comprehensive a manner as possible
- Analyze data regarding the incidents
- Interpret and report on facts of the incidents and significance of the incidents

## **Applications of Technique in Information Domains**

- Using critical incidents in information services to estimate savings via cost avoidance (see King/Griffiths)
- Using critical incidents in information technology investments to estimate return on investment (see Strassmann)



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## Call for Quantification

- Develop and describe sampling methods for various user domains to assure statistically valid samples
- Establish protocols for collecting anecdotal information about systems and services in a uniform manner
- Provide samples of data analysis techniques and presentation methods

## References

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Strassmann, Paul A. The Business Value of Computers, New Canaan, CT: The Information Economics Press, 1990



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## Appendix E

### THE IMPORTANCE OF LSTA REPORTING AND EVALUATION FOR CONTINUED FEDERAL FUNDING AND REAUTHORIZATION

Carol C. Henderson  
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September 16, 1997

Presentation to the NCLIS/NCES  
Library and Information Services Policy Forum  
on LSTA State Grant Program: Data Needs and Implications

John Lorenz, in his wonderful diplomatic way, has given this presentation a fine sounding title -- "Importance of LSTA Reporting for National Understanding." But let's face it -- the reality is much more mundane, although absolutely crucial. It's the "Importance of LSTA Reporting and Evaluation for Continued Federal Funding"! And a few years down the road, it's the "Importance of LSTA Reporting and Evaluation for Reauthorization"!

Any of you who were involved in our 4-year reauthorization project that resulted in the new Library Services and Technology Act may groan to even think about reauthorization again. And hopefully when that time comes LSTA will need, at most, a little fine tuning, and not the wholesale rewriting that culminated less than a year ago.

Reporting and evaluation are important to the federal process every year. Why? A bit of history first, and a cautionary tale. We have had very little national level evaluation of LSCA. One of the significant studies a few decades back showed that,

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thanks in large part to the Library Services Act and the Library Services and Construction Act, public library service had been extended to 96 percent of the country, a dramatic improvement since 1957 when LSA was first funded.

Now, that data could have been used to claim credit, inquire into the *quality* of service in many parts of the country, and refocus the Act on the changed nature of the job to be done. But Administrations at that time simply used the data to say the federal task had been accomplished, and the program was no longer needed. For many years after that, zero budget justifications were based on that piece of data.

What lesson might we learn from this tale? We will soon be at the point where more than 90% of public libraries will have some kind of connection to the Internet. What then? We could well be in danger of a similar phenomenon -- the federal job is done! Why do we need LSTA? Why do we need discounts on telecommunications rates?

That's why I'm pleased that the new data from ALA's OITP and NCLIS, as previewed for you yesterday by John Bertot, paint a much more complex and sophisticated picture. Yes, we've made significant progress in libraries connected to the Internet, up from 44 to 72% in a year.

But no, the job is by no means done. The new data also show that almost half of public libraries do not yet offer any WWW access, and only 9% provide web access to the public at every outlet in their systems.

Perhaps because of the impression that the job was done, there were no further comprehensive national evaluations of the federal library program. Administrations continued to give it benign neglect. The program continued to be popular with Congress because legislators liked libraries, because library constituencies were active and supportive, and because the program caused no controversy.

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And it wasn't that there was no evidence of what LSCA accomplished. The Office of Education and then the Department of Education would (less often than we would like) issue reports, some of them quite attractive, giving examples of activities funded by LSCA. State library agencies turned in the required reports, and considerable evaluative activity took place within states.

Further, there was never any hint of funds being misused. There were a few disputes over whether a rare state that could not maintain effort deserved a waiver. And in the years before LSCA Title I was made more flexible, some auditors objected to public library projects that involved library databases with school and college library holdings. And there were (and always will be) disagreements between individual libraries and state library agencies on the use of federal funds.

But had there been any hint of scandal or abuse in this program, unfavorable Administrations would have exploited it. It is a tribute to libraries everywhere that the program remained lean, highly leveraged, effective, and popular with Congress. So what effect did the lack of national level evaluation have?

Since most Administrations gave LSCA little attention, Congress was free to tinker with the program on its own, although never moving far from the focus on technological innovation for sharing library resources and for sparking innovative services to the underserved.

Given the lack of a firm evaluative basis for revising the Act, congressional friends added complicating provisions to the state-based titles based on their own interests or those of key constituents, and added several special focus titles. Some of these gave attention to important issues such as literacy, and accomplished much good. Some were so specialized that they were funded only minimally or not at all.

Over a surprisingly long period, LSCA received no thorough review. But it became what one memorable assistant secretary

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called "encrusted with barnacles." By the early 90s it was apparent that LSCA needed to be hauled into dry dock and given a good cleaning.

It is to the great credit of leaders in the library field that they decided to do this themselves. Evaluative studies would have helped immensely with this process. But over a two-year period, associations representing libraries came up with a good plan for a Library Services and Technology Act. And just in time!

The 1994 congressional elections changed the party in power in Congress and put new chairs at the helms of committees and subcommittees. The new congressional leaders set out to change everything -- just as LSCA was about to sunset.

I'm convinced we would not have gotten a multiple-year renewal of the existing LSCA. But a streamlined and refocused LSTA could be adopted by a new Congress as a new program. During the two-year roller coaster ride to passage, LSTA was streamlined more than we bargained for, and acquired a new home. But in the end it was enacted.

It was the only major program of many expiring programs housed in the Department of Education to be reauthorized in the 104th Congress, and, ironically, the only expiring program for which the Administration had made no recommendations to Congress.

But the last Congress and this one have also taken to heart the Government Performance and Results Act. Congress is in no mood to fund a program simply because they renewed it or funded it last year, or even because the White House asked for it. Congress still thinks kindly about libraries, but they want to know exactly what the federal program has accomplished and why continued funding is needed.

I've already been told in meetings with appropriations staffers that they expect the constituencies of the programs to cooperate

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fully with this need for results. They know the federal agencies can't do it alone; Congress wants and expects cooperation from the constituencies.

I'm pleased that IMLS is committed to this process. Diane Frankel has made quite clear that evaluation is a high priority for her, not just to comply with the law, but to have ammunition to take before Congress. This is a refreshing change for the library program! And IMLS is getting substantive help from COSLA.

Yet we have special challenges in producing evaluative data that are realistic and meaningful. We have the traditional difficulties of producing quantifiable results for a public good such as library service. We have the difficulty that library users are voluntary, not captive clientele; that librarians inquire into their motives only enough to help them; and that the impact of using a library may not be immediately apparent.

And with the federal program, we have the problem that it is one small funding stream combined with much larger sources of support. LSTA may leverage new and improved services, but are new users served or served better due to the federal stimulus alone? or to the state money added to the federal? or to local matching funds? or to a combination of all of these? We need a way to measure federal leverage.

Another challenge comes from a desirable feature of LSTA -- flexibility. States have much more flexibility to adapt the federal purposes to state and local needs. And states have a major role in evaluation. But we must have at least a handful of nationwide indicators of LSTA effectiveness. And because technology and services evolve more quickly now, we must make sure our indicators evolve as well. Consistency and comparability over time must be balanced with the changing role of libraries in our data gathering and reporting.

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Finally, we must be careful what we measure and whether it goes far enough. The purposes for which states can use LSTA funds list electronic linkages, electronic networks, sharing of resources and computer systems, and targeting services to the underserved. We can indeed measure how many libraries are linked and to what, and how much sharing is going on. But frankly, what does that mean to a congressional appropriator?

These mechanisms help libraries put certain infrastructure in place so that service can be improved. And this is an appropriate federal role; much of that infrastructure would be hard for the individual library to acquire on its own. But it's technical and not very exciting in and of itself.

More important is -- what do electronic linkages and the sharing of library resources mean for the library user? How do the improved services the infrastructure makes possible really affect the legislator's constituents?

Whatever the challenges, we must have national level reporting and evaluation on what LSTA is accomplishing. We must do it; we must do it well; we must do it carefully; and we must use the results judiciously. Future LSTA funding depends on it. Continuation of LSTA beyond the current six year reauthorization depends on it.