

**Report from the Center for Research Libraries / Greater Western Library Alliance
Working Group For Quantitative Evaluation Of Cooperative Collection
Development Projects**

Members

Steve Atkins – Texas A & M University
Steve Bosch – University of Arizona (Chair)
Mary Munroe – Northern Illinois University
Lucy Lyons - Arizona State University
Anna Perrault - University of Florida
Karen Schimdt – University of Illinois
Chris Sugnet – University of Nevada Las Vegas

Cooperative collection development is an important strategy libraries have used to maximize local resources. One question that is always associated with the topic has been, “How do we know if a cooperative project has actually benefited our library?” The Working Group For Quantitative Evaluation Of Cooperative Collection Development was asked to develop methods for answering this question. The Aberdeen Woods Conference on Cooperative Collection Development (AWCCCD) held in November 1999 was the genesis of this project. The scope of the Conference was to discuss current initiatives in cooperative collection development and to seek ways to expand the scope of this activity. The Conference was intended to produce outcomes that would provide a foundation for future developments in cooperative collection development. Four Working Groups were established to implement projects identified by Conference participants as important to future CCD development. This was one of those groups.

For the purposes of these initiatives, cooperative collection development was defined as any collaborative activity characterized by planned, coordinated collection development and/or management. All collaborative enterprises, even informal working arrangements, are eligible for inclusion as long as they are active and viable. This definition of CCD encompasses consortia that purchase electronic databases as well as collaborative digitization projects.

The 4 projects established after the Conference included:

- Current CCD Mapping Project: Develop "tree of possible" CCD models and develop website database of current CCD projects.
- CCD "Best Practices" Project: Identify critical operations relating to cooperative development projects, and examine projects which have developed successful approaches.
- CCD Quantitative Evaluation Project: Create methods for quantifying, evaluating and maximizing the economic benefits of cooperative collection development projects.
- CCD in Sci-Tech Collections Project: Examine ways to expand the scope of cooperative collection development in the shared acquisition of publications dealing with scientific and technical subjects, an area of great expense for major research libraries.

Each group was provided a specific charge that outlined the scope of their activities. The Charge for the Quantitative Measures group follows.

MISSION: This project group will create methods for quantifying and evaluating the economic benefits of cooperative collection development projects and develop tools for using this data to maximize the benefits of cooperation.

OUTCOMES: The project group will investigate and define activities or cost drivers that could be used to measure cooperative collection development projects, develop a scaleable tool or a set of procedures that can be used by participants in CCD projects to evaluate their projects, pilot the evaluation of a project, and develop an assisted self-assessment program applying the results of the evaluation.

As the project was getting underway, Adrian Alexander (the Director of the Greater Western Library Alliance (GWLA), – at that time the Big Twelve Plus) believed that this project could be a good opportunity for collaboration between CRL and GWLA. GWLA was undertaking several cooperative collection development projects and was developing processes for shared purchasing of electronic resources. GWLA would need to develop quantitative performance measures for the emerging initiatives if the new efforts were to be effectively assessed. After consultation with CRL and GWLA this project became a joint CRL/GWLA effort. Volunteers were drawn from both GWLA and CRL Aberdeen Woods Conference participants. The working group started with 10 members but has now dropped to the current seven members.

Initial processes for the work of the Group

The working groups were expected to accomplish their work mainly through the use of e-mail and conference telephone calls. This proved to be a barrier at times since it is sometimes difficult to schedule busy professionals for conference calls, and e-mail is not a good tool for reaching clarity on complex issues. The first step taken by the Group was to review the literature concerning performance evaluation and quantitative measures activity in the library field. There is not a substantial body of information relevant to libraries, but several other national and international library groups were developing similar projects. The Working Group focused attention on the Association for Research Libraries' New Measures Initiatives in particular the Association Of Research Libraries E-Metrics Study see (<http://www.arl.org/stats/newmeas/emetrics/index.html>.) The ARL initiative was intended to address two basic needs: to shift library statistics from the collection of simple input measures to the development of statistics that measure outcomes that impact important programs, and to be able to benchmark best practices that maximize the use of resources. Also, the Group reviewed similar activity by the International Federation of Library Associations (IFLA) IFLANET, Internet & Networking, Surveys and Statistics: see (<http://www.ifla.org/II/stats.htm>) as well as the Equinox Library Performance Measurement and Quality Management System Project in Great Britain see (<http://equinox.dcu.ie/>.)

Once the Group had developed an understanding of the issues that might be involved in the project, a basic definition of what would constitute a successful CCD project was developed. What constitutes a successful cooperative collection development project? A general description: A successful cooperative collection development project reduces unit costs, and increases access to information resources, resulting in increased use and user satisfaction.

From this basic definition, the Group then began the process of crafting test performance measures. As much as possible, the focus of efforts was on outcomes using a modified balanced scorecard approach. Normally, the balanced scorecard is a performance management method that incorporates information from four perspectives: feedback from customers, internal business data, learning and growth of the organization, and financial success. For the purposes of this project, learning and growth were not considered major performance issues, at this time. As the nature of cooperative collection development changes and shifts from an activity based on projects to an activity that has become part of continuing operations, this could change. The group developed four basic groups of performance measures including:

- Resources or input data – numerical data like FTE, staff, items purchased, items in collections, etc
- Financial – Library / group expenditures, unit costs, etc.
- Use – use of electronic, print, or near print, documents delivered, etc
- User satisfaction

Within these basic groups, the following specific performance measures and underlying data points were identified by the Group as those that would be most effective in measuring CCD efforts and those that would be the most effective at determining if a cooperative collection development project reduced unit costs, increased access to information resources, and resulted in increased use and user satisfaction.

FINANCIAL. Financial measures look at the effective use of resources to achieve the goals of the project. An important measure will be the overall decline in the unit cost/ per use of the resource per FTE. To determine this cost, it will be especially important to measure costs before the CCDP (if possible) and after. Some data points may not be directly related to dollars, but are important to determining the cost effectiveness of a project.

Performance Measures:

- | | |
|---------|--|
| PM F.1 | Unit costs per use per FTE students (or other user base) per individual institution versus unit costs per use per FTE students (or other user base) per consortia or cooperating group |
| PM F.2. | Unit costs per FTE staff per individual institution versus unit costs per FTE staff per consortia or cooperating group |

Data Types / Points:

- | | |
|------|---------------------------|
| F 1. | Total FTE students served |
|------|---------------------------|

- F 2. Total FTE per professional library staff
- F 3. Items processed per library staff FTE
- F 4. Total library expenditure per items processed
- F 5. Documents delivered per library staff FTE
- F 6. Total library expenditure per document delivered
- F 7. Total library expenditure per titles in stock
- F 8. Total library expenditure per FTE
- F 9. Library staff expenditure and operating costs per FTE
- F 10. Acquisition costs per FTE
- F 11. Cost/use of electronic full-text journals (local and consortial)
- F 12. Cost/use of electronic reference sources (local and consortial)
- F 13. Cost/use of electronic books (local and consortial)
- F 14. Cost/use of journals (local and consortial)
- F 15. Cost/use of near print sources (local and consortial)
- F 16. Cost/use of books (local and consortial)
- F 17. Cost /use of ILL items delivered to internal customers (local and consortial)
- F 18. Cost/use of ILL items delivered to external customers (local and consortial)
- F 19. Library expenditures for information technology overhead including bibliographic utilities, networks, and or consortia
- F 20. External expenditures (on behalf of a library) for information technology bibliographic utilities, networks, and or consortia

RESOURCES / NUMBER

Expanded access to resources, enhanced collection strengths, and access to more unique resources are not measures that are easily defined, as there are qualitative aspects that are hard to measure. This area has been divided by format (serial and non serial) since there are some basic differences between the two types of measures. Since cooperative collection development is the focus of the measures, most of the data would be collected and reported on a consortial level rather than single institutions however, most of the measures would be compared to baseline data for the unit of measurement which in many cases would be data from individual institution. Stated more simply, most of this data would be gathered for the group (number of staff, subscriptions, etc) but the data to compare changes probably will be gathered at the institutional level.

Performance Measures:

- PM N.1 % increase in the overall number information resources available to the target population for the target subject area.
- PM N.2 % increase in the number information resources that represent primary materials that are now available to the target population for the target subject area.
- PM N.3 % increase in documents delivered or made available through ILL per FTE (target population) during a year

Data Types / Points:

Non-serial titles (near-print materials)

- N1. Number of non-serial titles by subject and time period
- N2. Ratio of titles to number of users
- N3. Ratio of titles to number of uses
- N4. Number of unique titles by subject and time period
- N5. Mean number of holding libraries per title (on the average how many libraries hold each title)
- N6. Median age of collections by subject (for subjects in which currency is important)

Serials

- N7. Number of subscribed to electronic full-text journals (individually and through consortia)
- N8. Number of current print journal subscriptions (individually and through consortia)
- N9. Number of electronic journals provided by cooperative agreements
- N10. Number of electronic reference sources and database including full text database (individually and through consortia)
- N11. Number of document delivery transactions (per individual institution and through consortia)

USE

If the success of a cooperative collection development project is characterized by increased use it becomes necessary to develop the means to measure use of the information resources that are targets for the project. There are many definitions for use, and it will be necessary to develop common terms for projects. Increased use could occur in several areas including: use of electronic resources, circulation or in-house use of print or near print collections, Interlibrary loan, etc. Use of electronic resources is still an area that lacks universal acceptance of definitions. A good source of information for this area is the document Guidelines For Statistical Measures Of Usage Of Web-Based Information Resources produced by the International Coalition Of Library Consortia (ICOLC) see <http://www.library.yale.edu/consortia/2001webstats.htm>. Another source of information will be forthcoming from the National Information Standards Organization (NISO) in NISO Z39.7-2002 Standard for Information Services and Use: Metrics & statistics for libraries and information providers--Data Dictionary. The standard is on draft trial, and there is no guarantee that the standard will be adopted, but the document is still valuable see <http://www.niso.org/emetrics>.

Performance Measures:

- PM U.1 Documents delivered / ILL per library staff FTE
- PM U.2 Documents delivered / ILL per FTE student during a year
- PM U.3 Use of electronic resources compared to number of electronic resources
- PM U.4 Use of electronic resources compared to costs for electronic resources

- PM U.5 Use of print /near print compared to number of titles in the collection
- PM U.6 Use of print /near print compared to the cost of the collection

Data Types / Points

- U1. Total population served
- U2. Use of electronic journal / full text collection
- U3. Use of electronic reference sources
- U4. Use of electronic books
- U5. Use of journal / full text collection
- U6. Use of near print collection
- U7. Use of books
- U8. ILL items delivered to internal customers
- U9. ILL items delivered to external customers

USER SATISFACTION

Information concerning user satisfaction is some of the hardest data to correctly gather and use. Generally, the best data comes directly from the users. Surveys are always costly in terms of staff time and costs, but using data from user satisfaction surveys can help demonstrate accountability. Can a CCD project be successful if the user population doesn't use it or express some satisfaction with the effort? Some variables that impact perceptions of quality and service are best discovered through direct interaction with customers. Some of the data types may not be incorporated into current performance measures listed below, but some data that describes activities like instruction and reference services may be very important variables in use and satisfaction.

Performance Measures:

- PM US.1 % increase in overall user satisfaction
- PM US.2 80% of users surveyed express satisfaction with information resources supplied through a cooperative collection development project

Data Types / Points

- US1. Trends in use of electronic journal / full text collection over time
- US2. Trends in use of electronic reference sources over time
- US3. Trends in use of electronic books over time
- US4. Trends in use of journal / full text collection over time
- US5. Trends in use of near print collection over time
- US6. Trends in use of books over time
- US7. Focus groups that measure user satisfaction with library services.
- US8. Surveys of satisfaction with document delivery services
- US9. Trends in use of electronic reference sources over time
- US10. Trends in use of print reference sources over time (reshelving studies)
- US11. Number of reference questions received over time
- US12. Number of correct reference answers received (unobtrusive studies)
- US13. Trends in use of electronic reference desk or virtual reference services

- US14. Number of students involved in formal BI per FTE students during a year
- US15. Measures of use of library resources in freshman, sophomore or capstone courses (studies using readers and student papers including control and instruction groups)

NEXT STEPS

After crafting draft performance measures and data types, the Group then reviewed the activity of the other CRL project teams to determine if there was information they had developed that would inform our efforts. The project, Current CCD Mapping Project: Develop "tree of possible" CCD models and develop website database of current CCD projects, had useful information concerning current CCD activities. The projects listed in this mapping were organized by our project into 9 broad groups for CCD including: Shared Personnel, Shared Resources via ILL, Shared Collection Development Programs, Shared Electronic Resources, Shared Reference, Duplicate Exchange, Off Site Storage / "Last Copy" Projects, Preservation, and Shared Digitization Projects. The Group plans to craft "tool boxes" for each of the areas identified above that can be used as a template for developing quantitative measures. The "tool box" would provide a broad outline describing how to go about establishing procedures for measuring the effectiveness of cooperative collection development projects. It would include performance measures relevant to an area, data types and definitions as well as suggested methodologies for gathering data. A sample follows:

DRAFT TEMPLATE FOR A SET OF MEASUREMENT TOOLS FOR SHARED DIGITIZATION PROJECTS

A Shared Digitization Project would include any collaborative activity that is characterized by planned efforts that results in materials from individual institutions being reformatted or created in a digital format and made available to a broader group of institutions. All collaborative enterprises, even informal working arrangements, are eligible for inclusion as long as they are active and viable. This definition encompasses consortia.

SPECIFIC PROJECT ORIENTED PERFORMANCE MEASURES:

- PM 1. % Change in the number of digital resources made available to users through the project. The resources should be tracked by category, (could include serial, non serial, near-print, electronic, etc.) by subject, and by time period for the target area of the digitization project. $(N4 \text{ Time1} - N4 \text{ Time2}) / N4 \text{ Time1}$
- PM 2. Unit costs, per use, per FTE user base, per individual institution versus unit costs per use per FTE user base for all digitization project participants. $(F3+F5+F9/U1/N1)$ compared to $(F4+F5+F10/U2/N2)$
- PM 3. Unit costs per FTE project staff per individual institution versus Unit costs per FTE project staff per other digitization arrangements. (Baseline costs) $(F4/N14) / (F4/N15)$

- PM 4. % Change in the ratio of the number of titles made available to the number of users for the target area of the digitization project. $(N4 \text{ Time1} - N4 \text{ Time2}) / N4 \text{ Time1}$ compared to N2
- PM 5. % Change in the ratio of the number of titles to the number of uses for the target area of the digitization project. $(N4 \text{ Time1} - N4 \text{ Time2}) / N4 \text{ Time1}$ compared to U2
- PM 6. Total library expenditures for support for the digitization project $F3+F5+F9$
- PM 7. Total library expenditures for staffing, processing, in support of the target area prior to digitization project $F3+F5+F9$
- PM 8. Items processed per library staff FTE $N4/N15$
- PM 9. Shelf space made available compared to project costs $N19 / F3+F5+F9$
- PM 10. Use compared to access records created or linked $U2/N16$
- PM 11. Use compared to public relations / education costs $U2/F11$
- PM 12. User satisfaction with information resources in target area of the digitization project US1
- PM 13. User satisfaction with available digital resources in the target area compared to unit costs US1 compared to $(F3+F5+F9)$ or $(F4+F5+F10)$

DATA TYPES FOR PERFORMANCE MEASURES

FINANCIAL.

Data Types / Points:

- F 1. Total FTE students served
- F 2. Total FTE per professional library staff
- F 3. Items processed per library staff FTE
- F 4. Total library expenditure per items processed
- F 5. Documents delivered per library staff FTE
- F 6. Total library expenditure per document delivered
- F 7. Total library expenditure per titles in stock
- F 8. Total library expenditure per FTE
- F 9. Library staff expenditure and operating costs per FTE
- F 10. Acquisition costs per FTE
- F 11. Cost/use of electronic full-text journals (local and consortial)
- F 12. Cost/use of electronic reference sources (local and consortial)
- F 13. Cost/use of electronic books (local and consortial)
- F 14. Cost/use of journals (local and consortial)
- F 15. Cost/use of near print sources (local and consortial)
- F 16. Cost/use of books (local and consortial)
- F 17. Cost /use of ILL items delivered to internal customers (local and consortial)
- F 18. Cost/use of ILL items delivered to external customers (local and consortial)
- F 19. Library expenditures for information technology overhead including bibliographic utilities, networks, and or consortia

- F 20. External expenditures (on behalf of a library) for information technology bibliographic utilities, networks, and or consortia

RESOURCES / NUMBER.

Data Types:

- N1. Total FTE students/faculty/customers served local
- N2. Total FTE students/faculty/customers served co-operating group or consortia
- N3. Total FTE library staff
- N4. Items processed (could be items cataloged or inked, items digitized, etc.
- N5. Documents delivered
- N6. Documents delivered in target area
- N7. Titles in stock – locally held (useful to organize by subject and by publishing date)
- N8. Titles available through shared collections (useful to organize by subject and by publishing date)
- N9. Serial subscriptions (print or electronic) – local
- N10. Serial subscriptions (print or electronic) – consortia
- N11. Units purchased (print or electronic) – local
- N12. Units purchased (print or electronic) – consortia
- N13. Number of library computer workstation hours available
- N14. Library staff assigned to project local
- N15. Library staff assigned to project co-operating group or consortia
- N16. Number of access records created or records linked
- N17. Items committed to target project – locally held (useful to organize by subject and by publishing date)
- N18. Items in target project available through shared collections (useful to organize by subject and by publishing date)
- N19. Shelf space made available through the removal of materials from local collections

USE = INCREASED USE, CIRC, ILL, ONLINE, ETC.

Data Types:

- U1. Use of electronic resources (could be e-journals, full text databases, A and I or other reference databases, e-books, or other digital resources, etc.) local. Use should be defined based on ICOLC guidelines
- U2. Use of electronic resources (could be e-journals, full text databases, A and I or other reference databases, e-books, or other digital resources, etc.) co-operating group or consortia. Use should be defined based on ICOLC guidelines
- U3. Use of print or near print collections local
- U4. Use of print or near print collections co-operating group or consortia
- U5. ILL/document delivery items delivered to internal customers
- U6. ILL /document delivery items delivered to external customers
- U7. Percentage of information requests submitted electronically (could be ILL requests, reference, purchase requests, etc.)

- U8. Library computer workstation use rate
- U9. Rejected electronic sessions as a percentage of total attempted sessions
- U10. Reference transactions local
- U11. Reference transactions provided external customers
- U12. Use of print reference collections (re-shelving studies)
- U13. Number of correct reference answers received (unobtrusive studies)
- U14. Number of students receiving bibliographic instruction, or other similar library based training

Data Collection Procedures

It was recognized that a set of procedures would need to be developed to assist in the implementation of a measurement project. For each data type there would need to be an outline that defined the data element and described how to gather the information. A sample is provided below.

TEMPLATE Data Collection Procedures

N1 Number of non-serial titles by subject and time period

Definition: The number of monographic titles, definition for title as follows:

Title: a single physical unit of any printed, typewritten, handwritten, mimeographed, or processed work, distinguished from other units by a separate bibliographic record or description, which has been cataloged, classified, and made ready for use, and which is typically the unit used to charge circulation transactions.

Subject: The classification system used to develop subjects should be identified. The following subject classification systems are preferred: Dewey Decimal Classification (DDC), Library of Congress (LC), National Library of Medicine (NLM), or the Universal Decimal Classification (UDC) and its twenty-five groups as set forth in the UNESCO recommendations [3] (see section 6 References for subject classification systems). If an index is not arranged by subject, the organization of the index will still need to be described.

Time Period: For the sake of comparability with other measures, the preferred time period would be determined based on the reporting needs. The selected period should conform to regular intervals such as fiscal year, calendar year, or imprint year. The rationale for the selection of the base period should be provided.

Implementation:

Collected by: Local systems

Frequency: Reported as needed to support the reporting on progress of the project

Procedures: Include in volume counts duplicates and bound volumes of periodicals. For purposes of this measure, unclassified bound serials arranged in alphabetical order are considered classified. Exclude microforms, maps, nonprint materials, and uncataloged items. If any of these items cannot be excluded, please provide an explanatory footnote in the "Footnotes" section of the report from. Include government document titles that are accessible through the library's catalogs regardless of whether they are separately shelved. "Classified" includes documents arranged by Superintendent of Documents, CODOC, or similar numbers. "Cataloged" includes documents for which records are provided by the library or downloaded from other sources into the library's card or online catalogs. Documents should, to the extent possible, be counted by the number of unique records used to catalog the documents.

IMPORTANT: Title counts should not be considered the same as volume counts or piece counts. They are very different. If a volume count becomes necessary, it may be estimated through sampling a representative group of title records and determining the corresponding number of volumes, then extrapolating to the rest of the collection. Or, as an alternative, an estimate may be made using the following formulae: 52 documents pieces per foot / 10 "traditional" volumes per foot = 5.2 documents pieces per volume. If either formulas or sampling are used for deriving your count, please indicate in a footnote.

Subject organization needs to be agreed to by all project members prior to gathering the information. Subject divisions provide the outline for the collection process. The overall classification system has to be negotiated as well as the level to which subject will be divided. Enter all subject classifications in the study on the data collection forms.

Time period is also defined (annual based on calendar, quarterly based on fiscal year, etc.) prior to gathering the volume counts. Indicate the date or time period to which the count is applicable in the "Title Count Source Date" column in Figure 1.

Figure 1: (for N1) **SAMPLE NUMBER /SUBEJECT/TIME REPORT FORM**

Name of Co-operative Project: _____

Subject Classifications	Participating Institutions				Time of Count
	Volumes (Participant A)	Volumes (Participant B)	Volumes (Participant C)	Volumes (Participant Etc.)	

Summary of the Project to date

A large portion of basic data types are standard data like expenditures, use, number of volumes or items, staffing, FTE, etc. These types of data have been collected regularly by libraries in the past. What's changing in the area of gathering library statistics is that these data points are being combined with other to form measures for performance not just statistics. Different measures are the products of several variables not just a simple number – e.g. cost per use compared to FTE or other user base.

Using the balanced scorecard management approach, it is important to look at use, and user satisfaction as well as all the other measures. Feedback from customers is important in developing the customer's perspective on performance.

These combined measures are more likely to indicate success than simple input or output measures. For example, the success of a project is much more clearly indicated by the measures: use of the resources increased 17% while unit costs dropped 3% and users indicated 90% satisfaction with the program, as opposed to the simple measure, the library made 15,000 additional titles available to customers.

Cost per use is an important component of the performance measures. A product or service may cost more in a cooperative collection development project due to wider participation and a wider availability of information. If the use increases more than costs, then a reduced cost per use was achieved. For example: A library participates with a group in a shared collections project. They are responsible for providing a defined set of materials to all members participating. The standard costs of purchasing and processing the resources would need to be combined with the costs of delivering the materials to participants. For the program to be successful the total costs compared to use should decrease. Also, overall use should increase by at least the same percentage as the user base. If there were 150% more users in the group then similar numbers should be seen for increases in use. If not then the program needs to be reviewed to understand why it hasn't achieved minimum market penetration. Outreach, marketing (PR), bibliographic access, or library instruction could all be variables contributing to lack of use.

Cost per use has been an elusive figure to develop especially for electronic resources. The problems of gathering comparable use data was a significant barrier discovered in the ARL E-metrics program and will also present difficulties for cooperative collection development projects. However, since some CCD projects are limited in scope it may be easier to craft common definitions for "use" for the specific project and gather comparable data. Gathering comparable use data from 2-3 vendors would be possible. Trying to develop common data from the entire marketplace is impossible at this time.

Next Steps

- The Group is working with the Greater Western Library Alliance to develop base line data on the cost effectiveness of the consortial purchase of electronic information resources.
- The Group is also looking for other groups that may want to pilot a measurement project.
- The Group plans to build customized tools for the pilots and provide definitions, methodologies and data gathering templates that can be used in the pilot measurement projects.
- Based upon feedback from the pilot projects, the Group will craft complete “toolboxes” and make these available to all interested parties.

BIBLIOGRAPHY

Bertot, J. (1999). Developing national network statistics and performance measures for U.S. public libraries: Models, methodologies and issues. In Proceedings of the 3rd Northumbria Conference on Performance Measurement in Libraries and Information Services (pp. 3-10). Newcastle Upon Tyne: Information North for the School of Information Studies, University of Northumbria at Newcastle.

Bertot, John Carlo. Measuring Service Quality in the Networked Environment: Approaches and Considerations. *Library Trends*, Spring 2001, Vol. 49 Issue 4, p758, 18p,

Bertot, J. C.; McClure, C. R.; & Ryan, J. (2001). Statistics and performance measures for public library networked services. Chicago, IL: American Library Association.

Cook, Colleen; Heath, Fred M. Users' Perceptions of Library Service Quality: A LibQUAL+ Qualitative Study. *Library Trends*, Spring 2001, Vol. 49 Issue 4, p548, 37p,

Corcoran, Mary. But Enough About Me, What About the Users? Online, Nov/Dec2001, Vol. 25 Issue 6, p90, 3p

Cullen, Rowena. Perspectives on User Satisfaction Surveys. *Library Trends*, Spring 2001, Vol. 49 Issue 4, p662, 25p

Flanagan, Pat; Horowitz, Lisa R. Exploring New Service Models: Can Consolidating Public Service Points Improve Response to Customer Needs? *Journal of Academic Librarianship*, Sept. 2000, Vol. 26 Issue 5, p329, 10p

Luther, Judy. NISO Forum on Library Statistics Information Today. June 2001, Vol. 18 Issue 6, p52, 2p

McClure, Charles R.; Lopata, Cynthia. Assessing the academic networked environment. *Journal of Academic Librarianship*, July 1996, Vol. 22 Issue 4, p285, 5p

Poll, R., Te Boekhorst, P. et al. 1996. Measuring quality: international guidelines for performance measurement in academic libraries. Munchen: K.G. Saur. (IFLA Publications 76).

Roswitha Poll, "Measuring Quality: International Guidelines for Performance Measurement In Academic Libraries," IFLA Publication 76 1996): 16.

Willemse, John. Performance assessment in IFLA and United Kingdom academic libraries. South African Journal of Library & Information Science, Dec. 1998, Vol. 66 Issue 4, p161, 5p

Young, Ann-Christe., "Performance measures". College & Research Libraries News, March 1998, Vol. 59 Issue 3, p207