HYPOTHESIS
THE NEWSLETTER OF THE RESEARCH SECTION OF MLA

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HYPOTHESIS:
The Newsletter of the Research Section of MLA
VOLUME 15, Number 2
Summer 2001

Research Spotlight

MLA Papers and Posters Win Commendations

—Submitted by Bob Wood, Chair, Awards Committee

At MLA 2001 in Orlando, judges from the Research Section evaluated over 150 presented papers and posters for quality of research and selected eight for special commendation.

Before the conference was held, Section Chair Jon Eldredge and Awards Committee members Bob Wood, Gary Byrd and Mary Snyder developed an evaluation form for scoring the papers and posters. They read the poster and paper abstracts and agreed on the most promising ones, which would receive their greatest attention. Early at MLA 2001, the group met and divided up the presentations, attempting to cover as many as possible by two or more judges. After the conference was over, they made their final determination by email.

The Research Award winners each received a prize of $100, and the Research Honorable Mentions received $50 apiece. In addition, each of the authors who was a member of MLA was sent a letter and a certificate commemorating the commendation.

Research Award recipients —

"Can We Prove that Medical Students Can Be Taught to Search MEDLINE Effectively?" by Kathryn Nesbit and Jan Glover (paper)

"Bibliographic Topography: Efforts to Assess the Lay of the Land," by Barbara Schloman

"Copyright Permission Odyssey: Direct Requests Versus the CCC," by James D. Prince, Beverly Gresehover and Lolita Heimbach (poster)

"Library Use Survey of University of Texas Health Science Center-San Antonio Faculty: Comparison of 1996 and 2000," by Jonquil Feldman and Virginia Bowden (poster)

Research Honorable Mention recipients —

"An Observational Investigation of Information Seeking and Use by Nurses at Work in a Non-teaching Community Hospital: Implications for Hospital Librarians," by Michelynn McKnight (paper)

"Use and Impact of Online Journals," by Sandra De Groote and Jo Dorsch (paper)

"Evaluating the Evidence: Creation of Gold Standard Practices for Searching and Filtering the Biomedical Literature," by Rebecca Jerome, Kimbra Wilder Gish and Nunzia Giuse (paper)

"Accessing the Most Recent Information," by helen-ann Brown, Kristine Alpi and Daniel Cleary (poster)

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HYPOTHESIS. The Newsletter of the Research Section of MLA
http://gain.mercer.edu/mla/research/hypothesis.html

HYPOTHESIS (ISSN 1093-5665) is the official newsletter of the Research Section of MLA. It is published three times a year by the Section: Spring (March), Summer (July/August), and Fall (November). It is also available at: http://gain.mercer.edu/mla/research/hypothesis .html

Items to be included should be sent to the Editor by the 15th of the preceding month (i.e., February 15th for Spring, June 15th for Summer, October 15th for Fall). Copy is preferred by e-mail, but will be accepted in other formats. *HYPOTHESIS* is selectively indexed in the *Cumulative Index to Nursing and Allied Health Literature* and the *CINAHL* database.

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International Research Reviews

— submitted by Anne Brice

VIVOS - Value and Impact of Virtual Outreach Services

Authors: Alison Yeoman, Jan Cooper, Christine Urquhart, Alyson Tyler (University of Wales Aberystwyth, UK)

Objectives: The aims of the Value and Impact of Virtual Outreach Services (VIVOS) project (2000-2001) were to evaluate existing health information outreach projects in the UK, and to use the cumulative experience of information professionals at the research sites to inform project management guidelines for the successful implementation and application of future programmes, which include the roll-out of the National Electronic Library for Health, and related projects.

Sample and Setting: Five different projects were recruited initially, with another two added later. Sites were based in rural, city and small town areas. The services studied were (mainly) networked database services, and the associated training and support operations. Other services investigated included a directory of (hospital and community) services, and an Evidence-Based bulletin. There was a strong emphasis on serving users in the community and primary health care at most sites.

Methods: A stratified (random) sample was generated at six sites, using data supplied by the libraries on user names and registration numbers. One hundred and thirty-seven interviews (mostly face-to-face) were conducted, with additional postal questionnaire surveys. Methods were based primarily on the collection and analysis of qualitative data, although some quantitative data on use of resources complemented the qualitative data analysis. The methodology was discussed with representatives at each site and methods adapted to suit the needs of the site and the research team. The methods were based on those developed in previous research on the value of information services to clinical decision-making and clinical competence, and included use of the critical incident technique and vignettes. Qualitative data were analysed using the NUD*IST software package, with SPSS and Excel used for the quantitative data.

The findings indicate that the same basic methodology can be used to assess the effectiveness of services, although questions have to be adapted to suit particular needs and the concerns of particular sites.

Results: Networked database services are valued by the users, though the usage among the vast majority of users is infrequent. The training provided was considered very useful but there is a need for ongoing support and advice, with more advanced training for some. Use of electronic journals is likely to be increasingly popular.

A cost-benefit analysis for one site indicated that the average cost savings are large, although most of this can be attributed to a small but very active group of users. Users find it difficult to estimate the time spent searching, retrieving and reading documents.

Barriers to use are the familiar constraints of time, coupled often with a less than ideal location of the IT equipment in the department or unit. Partly for those reasons, services which offer home-based access to information services are valued. There are some indications that (for some users) the Internet is becoming part of their 'personal collection' of information resources. At one site users clearly favour the provision of a one-page digest of the evidence, slanted towards local needs, as a way of keeping up to date with the evidence of most relevance to them.

Attitudes towards patient use of the Internet seem to be changing from fear of the over-informed patient to an acceptance of a changing role for the health professional as a 'mediator', explaining and sharing information from the Internet with the patient. Benefits appeared to outweigh the drawbacks.

Conclusions and Recommendations: The qualitative approach proved invaluable in giving an insight into changing attitudes, the effectiveness of the information systems innovations and some of the barriers to use, but it is time-consuming to obtain the interviews.

Critical success factors for these projects emphasised the importance of an overarching goal, flexibility of approach, ongoing support for users and an acknowledgement of the lifelong learning agenda for both library staff and users. •

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Report available on the Department web pages, research section (knowledge management group): http://www.dil.aber.ac.uk/

Chapter Research Committees Report

— submitted by Martha Earl

Research, Development, and Demonstration Project Grant: 2001 Award Recipients and Update

MLA provides research grants to researchers in any chapter whose work meets MLA's high standards. The purpose of the grant is to provide support for research, development, or demonstration projects that will help to promote excellence in the field of health sciences librarianship and information sciences. Grants range from $100 to $1000. Grants are not given to support an activity that is operational in nature or has only local usefulness. More than one award may be granted in a year.

The MLA Research, Development, and Demonstration Project Grant (RDDPG) recipients for 2001 are Shelley Paden, Interlibrary Loan and Serials Librarian, University of Tennessee Medical Center and Mary Congleton, Librarian, Southern Kentucky AHEC.

Web-based Loansome Doc: a Survey of the Midwest Region

This research will further the understanding of implementing a LOANSOME DOC program in a library, providing instruction for its use and the types of delivery methods that libraries offer. Also, it will provide understanding of LOANSOME DOC end-users, their usage patterns, training needs and types of delivery options they want. Ideally, barriers to the implementation of a LOANSOME DOC program will be more clearly identified and strategies to alleviate them developed.

The researchers propose to look at two aspects of LOANSOME DOC services--first, how LOANSOME DOC services are being implemented and utilized by medical libraries in the Midwest region; and second, the effect and satisfaction of LOANSOME DOC services on the end-user. The results from Paden's previous survey (Paden, Batson & Wallace, 2000) of Loansome Doc users in the Southeast will provide a base on which the current research project builds. The new study will enable the investigators to compare LOANSOME DOC use and satisfaction by librarians and end-users in both regions and the types of promotional efforts used. To expand on the previous work, the proposed project will include more in-depth questions on training issues and focus on delivery methods of LOANSOME DOC articles, especially electronic article delivery.

Previous RDDPG Award recipients

In 2000-01, members of the MLA Research, Development, and Demonstration Project Grant (RDDPG) jury followed up on the winners regarding whether or not they published their grant research and where they published.

2000: Jolene M. Miller. "Issues Surrounding the Administration of an Information Elective for Medical Students." Research in progress.

1999: Catherine Graber. "Survey of Health Sciences Faculty Use of Library Computer Systems." Not yet published.

1998: Mary M. Howrey. "A Case Study of Library-Community Agency Partnering and Coordination: The Teen CARE Network." Published as a dissertation, Northern Illinois University, August 2000.

1997: None awarded.

1996: Alexandra Dimitroff. "Problem Based Learning in a Health Sciences Librarianship Course." Published with co-authors, Annette Ancona and Susan Beman. *Bulletin of the Medical Library Association* 1998 Jul;86 (3):340-5.

1995: Monica Unger. "Comparison of Information Retrieval Methods in an Academic Medical Library." Not yet published.

1994: None awarded.

1993: Jennifer M. Bayne and Joan L. Leishman. "A Study to Measure the Impact of a Problem-Based Learning Curriculum on the Teaching Hospital Library of the University of Toronto." Published as "Impact of a Problem-Based Curriculum on Teaching Hospital Libraries," in Handbook on Problem-Based Learning by Jocelyn Rankin, MLA, 1998.

1992: None awarded.

1991: Joanne G. Marshall, Ph.D. "The Impact of the Hospital Library on Clinical Decision Making: the Rochester study." *Bulletin of the Medical Library Association* 1992 Apr;80(2):169-78.

Barbara Carlson and Robert Poyer. "An Investigation of a Rational Binding Schedule Based on Use and Indexing Patterns." Not yet published. Presented at the 1991 Annual Meeting of MLA under the title, "Those Dreaded Words: 'It's at the Bindery!'"

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(RDDPG—Continued from page 4)

1990: Paul Wrynn and Van B. Afes. "Biomedical Journal Title Changes: Reasons, Trends, and Impact." *Bulletin of the Medical Library Association* 1993 Jan;81 (1):48-53.

Diane Schwartz. "Impact of End-User Search Training on Pharmacy Students: a Four-Year Follow-up Study." Co-authored with Naomi Ikeda. *Bulletin of the Medical Library Association* 1992 Apr;80(2):124-30.

1989: Karen Hackelman Dahlen. "Imperatives for Continuing Research Education: Results of a Medical Library Association Survey." Co-authored with Prudence Dalyrymple and Joan Stoddart. *Bulletin of the Medical Library Association* 1992 Jul;80(3):213-8.

Virginia A. Lingle, and M. Sandra Wood. "Survey of Microcomputer Centers/Training Laboratories in Medical Schools in the United States and Canada." Not yet published.

1988: None awarded.

1987: None awarded.

1986: Mark E. Funk and Carolyn Anne Reid. "The Usefulness of Monographic Proceedings." *Bulletin of the Medical Library Association* 1988 Jan;76(1):14-21.

Audrey Powderly Newcomer. "Career Progression of Academic Medical Library Directors." *Bulletin of the Medical Library Association* 1989 Apr;77(2):185-95. •

Verified by the 2000-2001 Research, Development, and Demonstration Project Grant Jury: Martha Earl, Chair; Martha Verchot; Carolyn Lipscomb; and Anne Greenspan.

Section News

— submitted by Leslie Behm, Chair

My goals for the year - learn a new job, keep my head above water, and meet deadlines. Having said that - actually I am still working on the goals for the Research Section to bring to the Executive Committee.

So far, I have identified - the continuation of working on student member recruitment, evaluation of the newsletter to move towards a more peer-reviewed format, and the annual update to the Research Bibliography.

Jana has some exciting goals for the Research Resources Committee: 1) to update the bibliography, 2) seek out grant links, and 3) to also create some guidelines to go with finding references -- for example, creating some hedges for certain databases, and dating when each section has been updated.

Andrea has contacted the current editorial board to see if they would be willing to serve on a task force to evaluate the newsletter for a more formal process of submissions.

We have a new Web Page editor, Allan Barclay. Welcome Alan and thanks for taking on the maintenance of the section's web pages.

As of August 2001, we have 188 current members on the roster. I would like to see if we can excite more of the members to take a more active role in the section.

Leslie Behm
behm@pilot.msu.edu

Bylaws Committee Report

—Submitted by Andrea L. Ball, Chair, Bylaws Committee

The Spring 2001 issue of *Hypothesis* included a list of proposed amendments to the bylaws of the Research Section. These were to be voted on during the annual business meeting in Orlando. Due to a misunderstanding the amendments were not voted upon and have been tabled until the 2002 annual business meeting.

It was discovered that it was not necessary to vote on the proposed amendment changes as they merely brought the Section in to line with the bylaws of the Medical Library Association and did not constitute a substantial change in Section process or policy. However, MLA has suggested that it would be a good idea for the membership, as a good faith effort, to formally approve the amendments. And while the membership received written notification of the proposed changes an absentee ballot was not sent and therefore a vote was not possible during the annual business meeting.

It was recommended that a formal vote be taken in 2002 as a measure of good faith.

Questions or comments should be directed to Andrea Ball, Chair, Bylaws Committee. <ALBALL@facstaff.wisc.edu>

Evidence-Based Librarianship Implementation Committee Report

— submitted by Liz Bayley

Report of the Research Results Dissemination Task Force
Chair: Addaiane Wallace - Members: Liz Bayley and Anne Brice

In April 2001, MLA Research Section chair Jonathan Eldredge put out a call for volunteers to serve on a new Research Results Dissemination Task Force with the mandate to:

- recommend methods for improving the timely dissemination of research results to MLA members
- examine the issue of requiring structured abstracts for all contributed papers and poster sessions at MLA and MLA chapter annual meetings
- examine the feasibility of posting, in easily searchable form, such abstracts on MLA and MLA chapter websites for at least five years
- recommend incentives to encourage librarians to conduct and report the findings of their research.

There were three volunteers: Addajane Wallace, from the Medical Library, Halifax Medical Center in Daytona Beach, Florida; Liz Bayley, from the Health Sciences Library, McMaster University in Hamilton, Ontario, Canada; and Anne Brice from the Health Care Libraries Unit & Institute of Health Sciences Library in Oxford, England.

Since we, the members, have independent and inquiring minds, we decided to start with the issue of structured abstracts: what they are, where they come from, where they are going, and how they fit into the arena of health libraries research. Since we are conscientious proponents of evidence-based librarianship, we felt we should set an example by carrying out our self-assigned task in a systematic, research-based manner. And since we are an international group, we broadened the scope of our project beyond MLA to all health library research.

We would like to report on our project so far (using a structured format, of course).

Objective: To propose a format for structured abstracts for the reporting of health library research.

Proposed Methods:

1. a search of the health care, social sciences and library literature to identify rationales and models for structured abstracts;
2. a comparison of the various models and a selection of fields and labels for those fields to be included for health library research;
3. a draft of a format to meet the needs of the health library research literature;
4. a testing of the format against recent articles and conference papers;
5. a recommendation of the format to the editors of health library journals and to conference program chairs.

Preliminary Results:

In 1987, the Ad Hoc Working Group for Critical Appraisal of the Medical Literature published a proposal for structured abstracts for clinical articles.[1] An examination of editorials and instructions to authors shows a growing adoption of structured abstracts by biomedical journals. The editors of the *Medical Journal of Australia* introduce the requirement with an article entitled "Structured abstracts are good for you", using as their justification that "Readers love them: reviewers say they make the refereeing process more efficient; Medline applauds their neat-and-tidiness; researchers agree they make literature searches more precise; and authors find they make thinking easier." [2] Not all editors are in agreement: Walter Spitzer, *Journal of Clinical Epidemiology*, feels that creativity would be stifled and structures the Elizabeth Barrett Browning sonnet "How do I love thee?" to prove his point. [3] Structured abstract formats have been developed for review articles, and for a wide range of research methodologies as demonstrated in *Evidence-Based Nursing* (http://www.evidencebasednursing.com). James Hartley's recommendation for their use in social science journals [4] has been taken up by *Social Science Quarterly*.

The Bulletin of the Medical Library Association requires structured abstracts for research papers (http://www.mlanet.org/publications/bmla/bmlainfo.html#65), as does the *Health Information and Libraries Journal*; *Bibliotheca Medica Canadiana* recommends a structured abstract for research articles (http://www.med.mun.ca/chla/english/help.html#research). Structured abstracts are also becoming a requirement for submission of papers to many conferences, including those of the Medical Library Association and the upcoming Evidence-Based Librarianship Conference.

We feel that the rationale for the use of structured abstracts, as expressed by the editors of the *Medical Journal of Australia* [2] and as supported by the evaluation studies examined by Hartley [5], is convincing. For the users of research, structured abstracts can enhance retrieval, comprehension and an assessment of applicability to their own setting; for the creators of the research, they can add a level of rigor to the process and reporting of their findings. *(Continued on page 7)*

Evidence-Based Librarianship Implementation Committee
Task Force on Practice Guidelines

Recommendation/Position Statement

—Submitted by the Task Force members:
Andrew Booth, Molly Harris, Jessie McGowan, Suzetta Burrows

It is recommended that the Medical Library Association develop practice guidelines, which describe how best to perform specific processes or services. The practice guidelines should be based on "best available evidence" or higher evidence-based practices if available in the library literature and from other reputable sources.

It is recommended that MLA take the following steps to develop practice guidelines:

1. Research and gain a good understanding of the background, philosophies, and methodologies of developing the best available evidence clinical practice guidelines
2. Research and gain a good understanding of how and/or why clinical topics are selected for guideline development
3. Develop a list of priority tasks, procedures, processes, and/or services which are deemed important by MLA to librarians and users, which merit the need for guidelines, and the reasons why. Topics should be practitioner- and not literature-driven
4. Based on known clinical models, apply the best approach(es) to the following steps of formulating a complete library guideline:
    - Formulate the library problem
    - Locate, select, and critically appraise all relevant studies in the literature based on explicit inclusion/exclusion criteria
    - Collect data
    - Analyze the data and evaluate the evidence
    - Present and interpret results as a practice guideline
5. Establish a process for periodic review and updating of established guideline(s) based on new evidence
6. Research the desirability/need to integrate the practice guideline initiative with other MLA initiatives, e.g. benchmarking

—Submitted by Andrew Booth, Molly Harris, Jessie McGowan, and Suzetta Burrows

August 2, 2001

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What we have discovered so far is a variation in the number of fields, particularly the requirement of more detail to cover specific types of research, for example, therapy, diagnosis or etiology studies, qualitative research or systematic reviews. Even the simplest format of four major fields (Objective, Methods, Results, Conclusions) varies in the terminology used and the information required for each field. Added to the complexity is the question of structured abstracts for non-research articles such as case reports.

Conclusion: This is an exciting and challenging project. Please contact us if you have comments and stay tuned! •

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References:

1. Ad Hoc Working Group for Critical Appraisal of the Medical Literature. A proposal for more informative abstracts of clinical articles. *Annals of Internal Medicine*. 106(4):598-604, 1987 Apr.

2. Anonymous. Structured abstracts are good for you. *Medical Journal of Australia*. 153(5): 249, 1990.

3. Spitzer WO. The structured sonnet. *Journal of Clinical Epidemiology.* 44(8): 729, 1991.

4. Hartley, J. Is it appropriate to use structured abstracts in social science journals? Learned Publishing. 10(4):313-317. 1997. (http://cogprints.soton.ac.uk/documents/disk0/00/00/05/89/index.html)

5. Hartley J, Sydes M & Blurton A. Obtaining information accurately and quickly: are structured abstracts more efficient? *Journal of Information Science.* 22(5):349-356, 1996.

(MLA Research Awards — Continued from page 1)

The Awards Committee asked all the first authors to write a summary of their research for *Hypothesis*. These summaries follow.

~ Research Award Recipients ~

Can we prove that medical students can be taught to search MEDLINE effectively?

Authors: Kathryn W. Nesbit, MLS, AHIP, Coordinator of Education Services, Edward G. Miner Library, University of Rochester Medical Center, 716/275-6877; Katy_Nesbit@urmc.rochester.edu and Jan Glover, MLS, AHIP, Education Coordinator, Cushing Whitney Medical Library, Yale School of Medicine, 203/737-2962; janis.glover@yale.edu

Purpose: Evaluate the impact of training sessions on effective searching behaviors by analyzing students' MEDLINE strategies.

Setting/Subjects: 100 medical students followed during their first two years at the University of Rochester School of Medicine and Dentistry; control group - 46 third year medical students at the same institution

Methodology: During the first two years of medical school at the University of Rochester, this longitudinal cohort study tracked 100 medical students' ability to search Ovid Web MEDLINE as part of their coursework. After a one-hour hands-on MEDLINE training session in their first course entitled Mastering Medical Information (MMI), all students searched the same question. Search strategies were analyzed for specific search tactics compared to a gold standard strategy. After a session reviewing best strategies to answer the initial homework question, the students were given a second search question as a take-home exam. These strategies were analyzed against a gold standard strategy. Feedback was given to each student and those requiring remediation received additional training.

During their second semester, students attended a demonstration on advanced MEDLINE searching skills. Next each student had a 45-minute session with a librarian to review his/her search based on question arising from a clinical encounter during his or her Ambulatory Care Clerkship. Due to the volume and variation in individual questions, they were not formally evaluated but another assigned question was given to all students and those strategies were analyzed.

Similar assigned search questions were given twice during their second year of medical school once during the first semester and as part of the Comprehensive Assessment of the first two years of medical school. Their strategies were evaluated against a gold standard search. This last question was also given to a control group of 46 third year medical students who have not received the extensive MEDLINE training and reinforcement as the study group had. The control group had only attended a 30-minute hands-on MEDLINE class as part of their first year Orientation.

In order to evaluate the student strategies, a coding instrument was created to gather information about student search tactics. Twelve tactics were identified for each assigned question. To maintain consistency in the coding, two librarians reviewed each student strategy. Coding instructions were written and any disagreements were resolved by consensus.

Results: All students received feedback on their own strategies and an answer sheet and other tips for common errors after each exercise. From an email survey of the study group it was determined that 4% had never used a web browser, 25% had never searched MEDLINE, and 85% had never attended a MEDLINE class prior to arriving at medical school. The control students had all attended a MEDLINE class 2½ years prior to the study.

The students' ability to complete specific search tactics in the MMI homework, MMI midterm, Comprehensive Assessment, and control group assignment are respectively: tried searching all concepts in the question (88%, 92%, 75%, 41%), used all appropriate MeSH headings (94%, 98%, 81%, 76%), use specific subheadings (60%, 66%, 49%, 48%), exploded appropriate MeSH heading (34%, 45%, 44%, 24%), limited by age groups (58%, 96%, 86%, 39%), used Boolean operators correctly (100%, 97%, 97%, 91%), limited to English (54%, 91%, 93%, 87%), searched entire MEDLINE database (87%, 67%, 67%, 33%), and found too few citations (83%, 14%, 29%, 46%).

To verify the inter-rater reliability of the evaluators, four reference librarians from Cushing/Whitney Medical Library of Yale University were given a set of coding instructions and then each graded a set of 25 student search strategies. Out of 300 items, the librarians averaged 23 (7.58%) disagreements with the master answer. The weighted Kappa scores among the librarians ranged from .726-1.0 except for two tactics, which had scores of .555 and .144 respectively.

Discussion/conclusion: Attention was given to specific teaching points about searching MEDLINE on the Ovid Web interface to see if the students could incorporate these tactics appropriately into their search strategies. The coding instrument allowed librarians to evaluate student's skills efficiently and consistently. Librarians were also able to use the overall results to focus their training and feedback tips. Most students correctly applied the teaching points in their search strategies. The study group

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showed that they could be taught the importance of trying all the concepts of a question, searching the entire MEDLINE database and finding an appropriate number of citations. Both groups were able to find the appropriate MeSH headings, which is probably due to the fact that Ovid automatically maps the student's terms to appropriate MeSH headings. While the numbers were generally lower for the use of subheadings and explodes, the study group still out performed the control group showing that reinforced teaching does have an effect. Since all of the students including the control group understand the use of Boolean operators, we can spend less class time on this tactic.

While the overall results of the teaching were positive, there is still more work to be done in effectively teaching the appropriate use of subheadings and exploding MeSH headings. In addition, a scoring mechanism has been developed for the tactics and is in the process being refined. This coding/scoring instrument will be useful for others who are attempting to quantify student's searching abilities for grading purposes. •

Bibliographic Topography: Efforts to Assess the Lay of the Land

Author: Barbara F. Schloman, Assistant Dean, Library Information Services, and Professor, Libraries & Media Services, Kent State University

Purpose: Review of the collaborative research project that analyzed the literature of twelve allied health fields with the shared objectives to profile characteristics of each literature, identify the core journals, and determine the indexing coverage by various services.

Setting/subjects: The journal literature of 12 different allied health fields: cytotechnology, dental assisting, dental hygiene, diagnostic medical sonography, dietetics, health education, occupational therapy, perfusion, physical therapy, radiologic technology, respiratory therapy, speech-language pathology.

Methodology: Each researcher used a common bibliometric protocol to analyze references appearing in the articles of key journals of a given allied health field for a three-year period. The core journal literature of the field was defined by applying Bradford's Law of Scattering.

Results: When considering the format of the references, all allied health fields showed a primary reliance on journal literature. Books typically comprised less than 20% of the references. A higher reliance on books was seen for occupational therapy (26.1%) and speech-language pathology (29.8%). Use of "miscellaneous" materials (e. g., newspapers, dissertations) was the highest for health education (16.3%) due to references to government publications. For most fields, 75% or more of the references were less than ten years old. The notable exceptions were dental assisting (58.9%) and speech-language pathology (68.1%).

A common pattern emerged when comparing cited journal dispersion as revealed by the zones defined by Bradford's Law. On average less than 8% of the cited journals in a given field yielded two-thirds of the cited references. These were considered as the core journals of the field and were checked for coverage by the major indexing services. MEDLINE was found to provide the best overall coverage for each field. For some fields, comprehensive access to the journal literature was obtained only by using a combination of indexes. An example is health education for which coverage of its health and social science influences is provided by MEDLINE and PsycINFO.

Discussion/conclusion: Several questions arise from these findings. Each core list included journals from other disciplines. What is the nature of the relationship of the allied health field to these other areas (e.g., clinical information, methodology, theory)? For those fields that cite books at a greater rate, what characterizes this book material and why is it being used to such an extent? Could the reliance on older journal literature displayed by some fields be reduced by improved bibliographic access?

This research project was possible only because of the commitment made by the participating librarians and demonstrated the energy and momentum that can come from a collaborative effort. Comments received from practicing librarians indicate these results are being used to shape collections and to inform users about their core literature and its access. •

Copyright Permission Odyssey: Direct requests vs. the CCC

Authors: J. Dale Prince, Circulation Librarian; Beverly Gresehover, Assistant Director for Access Services, University of Maryland

Introduction

By allowing libraries to place copies of texts on reserve, "fair use" is the first and easiest method for copyright compliance. However, "fair use" has limits that make it a weak solution to the needs of library reserves collections. Other alternatives must be sought for acquiring the proper permissions for paper or electronic reserves over multiple terms or for extended periods of time. Going directly to the publisher is the traditional method for securing these rights. Complicating choices, however, is the availability of the Copyright Clearance Center (CCC), a

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one-stop-shop for obtaining permissions for reserve or other use.

Methodology
While obtaining copyright permission for reserves for approximately one semester, the Reserves Unit at the University of Maryland, Baltimore Health Sciences and Human Services Library (HS/HSL) tracked copyright permissions processes and their results. Requests for permission for all ereserve articles requiring copyright clearance were sent to fifty-six publishers and to the Copyright Clearance Center. A number of indicators were examined, including availability of copyright, speed of response, type of permission received, time stipulations, ease of attaining the permissions, and low transaction costs. Greater weight was applied to permissions for electronic reserve that were granted quickly, inexpensively, for extended time limits, and with no unusual requirements.

The information collected was compared to determine the efficacy of each means of obtaining copyright permission. Additionally, careful attention was given to the possibility that certain trends indicating the CCC's maturity may be detected: a large number of publishers using their services or a number of new referrals to the service. Finally, since prior anecdotal evidence suggested that both approaches to acquiring copyright permission were necessary, our data could be used to determine the best approach to using the two in tandem.

Of the fifty-six publishers queried, 4% supplied copyright permission for as long as needed. Thirty-eight percent responded with permission to place articles on reserve for one semester or more. Twenty percent gave no response. Nine percent supplied paper reserve permission only. And twenty-nine percent, including a publisher that had never done so before, referred requests to the Copyright Clearance Center. The CCC supplied permission for electronic reserves for one semester 57% of the time, referring the rest to the publisher.

The median response time for publishers was eight days with the CCC usually responding in ten minutes. Publishers averaged a cost of $8.79 for a class of thirty, and the Copyright Clearance Center averaged $55.74 for the same class (this cost includes the $2.50 query fee charged by the CCC for all permission requests). Additionally, publishers were occasionally willing to lower prices to conform to library policy, while the CCC's prices were fixed.

No data indicating trends in publisher's relationships to the CCC was statistically significant. Only one publisher, during the cycle of ereserve permission requests under scrutiny, "defected" to the CCC. However, the relatively large number of publishers referring us to the CCC indicates that the CCC has grown sufficiently to become a force, good or bad, for libraries to deal with.

Implications
Cost considerations make publisher-direct requests for copyright permissions important to libraries with ereserve collections. Publishers are more cost-effective than the CCC in terms of royalty charges and the scope of the permissions granted. However, an argument may be made that publishers are slow to respond and often require follow-up for permission, thereby requiring more staff time. Nevertheless, consideration must be given to the fact that many publishers allow ereserve access at no cost, and a number of them allow ereserve use for as long as needed. Conversely, some mission-critical publishers do not understand ereserve needs or have turned copyright management over to the CCC. Therefore, the CCC is essential to fulfilling the mission of reserve departments. Libraries must turn to the CCC for permission or risk failing to support users. For this reason HS/HSL has chosen to approach the publisher first, going to the CCC when required.

In choosing to use the Copyright Clearance Center, HS/HSL has discovered that libraries building ereserve policies and procedures around publisher-direct permission requests may find their current policies insufficient to their needs. For example, a policy for royalty payment based upon the expectation that publishers often charge flat rates may fail in the face of the CCC's practice of charging by the number of users. The CCC's charges may appear exorbitant for a class of ninety students when compared to the flat rate charges of a publisher. On the other hand, the publisher's flat rate could well exceed the CCC's charges for a smaller class. Libraries may wish to tailor their policies to accommodate both publishers and the CCC in order to best support their users. •

Faculty Survey of Library Use at the University of Texas Health Science Center at San Antonio: Comparison of 1996 and 2000

Authors: Jonquil D. Feldman, MLS, and Virginia M. Bowden, MSLS, PhD, AHIP, University of Texas Health Science Center at San Antonio, TX.

Purpose: To measure faculty perception of Library resources and services, compare results with the 1996 survey, and to systematically collect opinions.

Setting/subjects: Faculty at the University of Texas Health Science Center at San Antonio: 93 respondents out of 200 names randomly selected from Human Resources database.

Methodology: This was a questionnaire survey with multiple choice and some open-ended questions that was first done in 1996 and then repeated in 2000. The 1996 survey was created by members of the faculty-student

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Library Committee and sent via campus mail to 200 faculty whose names were randomly selected from the Human Resources database. There was a 75% response rate. The 2000 survey was modified to allow for changes in the databases and services available through the Library, and there were questions related to electronic access that had not been on the 1996 survey. The first mailing was sent via campus mail with two follow-up mailings. In total, 97 responses were received, a 47% response rate.

The surveys measured faculty perceptions of how important the Library resources and services are to their professional productivity. Multiple-choice questions measured use of services and information resources, including full-text journals and databases. Open-ended questions elicited opinions on journal cancellations, fee increases and prioritizing in times of limited funding.

Results: Faculty reported that Library resources remain essential to their professional productivity; they are more comfortable using computers to access Library resources and they are using Library resources in a different way than in 1996: fewer faculty come into the Library, while use of electronic resources is growing. Faculty support investing in electronic information resources.

A majority of respondents judged the Library resources and services as essential to their professional productivity: 53% in 1996 and 56% in 2000. The survey confirmed changes in use patterns that have been observed anecdotally: in 1996, 47% reported connecting to the Library's catalog via computer versus 79% doing so frequently in 2000. At the same time, fewer faculty in 2000 reported coming to the Library, sending someone else, or using the telephone or e-mail to contact Library staff. Fifty-two percent of the respondents in 2000 reported using Library resources more in the last few years compared to 1996 when only 29% checked this option. However, there were fewer faculty in 2000 who said the catalog, books and print journals were essential to their professional productive, while e-journals were rated essential by more faculty. Services such as Interlibrary Loan, photocopy services and e-mail access were perceived as essential by fewer faculty, but Internet access from the Library was rated essential or very important by more faculty in 2000.

The response to the question on the importance of investing in electronic information resources was the same in 2000 as in 1996: 53% considered it essential and only 4% considered it not important or had no opinion. An open-ended question asked if increases in fees and/or additional fees should be considered as a means of obtaining more revenue for the Library. Of the 50 who responded to the question, 40% said Yes, 25% said No, and 36% said to explore other alternatives before raising fees.

Discussion/conclusion: Respondents in 2000 reported using Library resources more than in 1996, and the importance of resources and services had not changed significantly. The survey provided concrete data about how faculty members are using the Library. Periodic surveys can be used to effectively document changes in faculty perceptions of the Library. •

~ Honorable Mention Recipients ~

An Observational Investigation of Information Seeking and Use by Nurses at Work in a Non-teaching Community Hospital: Implications for Hospital Librarians

Author: Michelynn McKnight, MM, MS/LIS, AHIP Director, Norman Regional Hospital Health Sciences Library, Norman, Oklahoma - Doctoral Student in Information Science, University of North Texas, Denton, Texas

Purpose: Hospital nursing is an information rich activity. Nurses are the largest single group of hospital employees, but usually not the largest single group of hospital library clients. What kinds of questions arise on the job and how do nurses choose which questions to pursue? How do they seek answers to these questions? What information sources do they use and what barriers do they encounter? What are the implications for hospital librarians serving nurses?

In "Health Care Providers' Information Seeking Behavior: A Review of Recent Research", (*Medical Reference Services Quarterly* 2000; 19 (2): 27-50) McKnight and Peet identified and analyzed thirty-nine studies and nine reviews published in the 1990's. Many of the studies were based on self-report (in questionnaires, interviews or focus groups) and relied on memory rather than direct observation. There were some observational studies of physicians, but those of nurses were of nurse practitioners, nursing students or nursing faculty. (See "Beyond Surveys: Finding Out Why", *Journal of Hospital Librarianship*, 2001;1 (2): 31-39.)

This is a report on a pilot study in preparation for further research in 2001. The investigational review boards of the hospital where the research was conducted and the University of North Texas approved the project.

Setting/Subjects: The research was conducted in two units of a 250-bed non-teaching community hospital. One was a 20-bed intensive care unit and the other a 28-bed medical/surgical unit. There were 6 RN participants in the representative sample. One was a diploma nurse, two had associate degrees, one had an associate degree and was working on a BSN, two had BSN's. They ranged in age from 30 to 48 and in experience from 2 to 22 years.

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Three were male and three were female. Five were European American and one was not.

Methodology: The researcher observed one nurse at a time – two on twelve-hour shifts, two on eight-hour shifts and two on four hour half shifts for a total of 48 hours of observation. Two of the shifts were on weekday days, two on weekday nights, one on a weekend day and two on weekend nights. She took extensive short hand notes on all activities observed and heard. Towards the end of each shift, she audio-recorded a brief clarifying interview. The researcher transcribed all notes and the tape shortly after each observation and gave the transcription to the participant for review and correction. (They made very few corrections.) The resulting data set was over 4,000 paragraphs – an average of 86 per hour of observation.

The researcher used NUDIST (Non-numerical Unstructured Data Indexing Searching and Theorizing) software to code and index the data. The researcher used hierarchical codes in three tree structures (Information Seeking, Information Use, and Information Kind) plus free codes for concepts that emerged during study of the data. Information Seeking included these broad categories of information sources and many, many narrower categories: people (including patient, family member, other nurse, physician, other health care provider), paper charts, computer systems, published information and other. Information Use categories initially branched into "acts on" and "passes on" with many subcategories. Information Kind included patient specific, logistic, social, knowledge based and epidemiologic or statistical information. Some of the free coding terms included mobile computer use, multitasking, jot sheets, legal awareness, antipathy to reading on duty, decision not to pursue a question and barriers to information finding.

Results: Only 250 of the 4000 paragraphs of observation concerned neither information seeking nor information use. Nurses sought information most often from the patient – either by asking a question or by observing the patient or the patient's monitor. The second most frequently consulted person was the unit secretary (mostly for logistic and social information). Nurses were constantly multi-tasking, often observing people and machines at the same time. They rarely sat down and were very busy the entire shift.

Most of the information they sought was patient specific, logistic or social. They sought knowledge based information less often and epidemiological information rarely if at all.

Decisions to pursue a question were often based on a cost versus value analysis. The time to pursue a question, or the social cost of "bothering" someone is weighed against the importance of the answer to the care of a particular patient. Barriers were usually time and accessibility, illegible or missing documentation and malfunctioning or awkwardly designed systems. Confidentiality protections of systems (ID and password) so impeded access that the nurses usually carried personal notes in their pockets of the information they deemed most important. (These personal notes were destroyed at the end of the shift.)

The information they read in paper or automated sources was almost all patient specific. Some expressed a moral and ethical opposition to reading an article, text or knowledge based information source on-duty. As one said, "… the patient is paying for care.. If I have any time to read, it will be to recheck the chart, to make sure the correct meds have been given at the right time … If I read, it has to be after I get off work…"

Most information seeking studies concern episodic information seeking (question and answer) or browsing. In this setting, information seeking fit neither of those models but was often more akin to environmental scanning.

Discussion/conclusion: As Bunyan, Lutz and Dumont observed more than ten years ago ("Application of the 'Sense-Making ' model in designing library services for nurses", *Medical Libraries Keys to Health Information*, 1990: 66-69) nurses need different kinds of information than doctors. Time and distance barriers to library service are still crucial. They work different shifts than librarians and do not have the time to use Intranet or Internet sources on the unit. The researcher observed that even with automated drug resources and print drug references on the unit, nurses would call the pharmacy with a drug question rather than take the time to look up an answer.

Hospital librarians serving working nurses must provide services on a corporate library model (professionals will find it for the client) rather than an academic library model (the client must do most of the looking). It is sad when the best thing a nurse can say about a hospital library is that "it's nice to have if you're in school". Nurses chose to spend their working lives caring for patients, not studying. Asking a person is still faster for nurses than using intranets, gateways, and reference books. Hospital librarians are part of the health care professional team. We must expand, rather than abandon, ready reference service if we even pretend to serve on-duty nurses. •

Use and Impact of Online Journals

Authors: Sandra L. De Groote, M.L.I.S., Josephine L. Dorsch, M.A.L.S., AHIP, Library of the Health Sciences (Peoria), University of Illinois at Chicago

Introduction: The purpose of the paper was to identify users of online journals, patterns emerging among different users groups, impact on in-house journal use, and implications for serials collection development. Two sepa-

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rate investigations were conducted to obtain the information for this paper. Individual manuscripts are to be published for the two studies and their separate abstracts are provided below.

Study 1:
"Online Journals : Impact on Print Journal Usage" will appear in the October issue of the *Bulletin of the Medical Library Association* (BMLA). The abstract is preprinted below with permission from the BMLA.

Purpose: To determine the impact of online journals on the use of print journals and Interlibrary Loan (ILL).

Setting: The Library of the Health Sciences Peoria is a regional site of the University of Illinois at Chicago (UIC) Library with a print journal collection of approximately 400 titles. Since 1999, UIC site licenses have given students and faculty affiliated with UIC-Peoria access to over 4,000 online full-text journal titles through the Internet.

Methodology: The Library of the Health Sciences Peoria has conducted a journal use study over an extended period of time. The information collected from this study was used to assess the impact of 104 online journals added to the collection in January 1999 on the use of print journals.

Results: Results of the statistical analysis showed print journal usage decreased significantly since the introduction of online journals, $F(1,147) = 12.10$, $p<0.001$. This decrease occurred regardless of whether a journal was available only in print or both online and in print. Interlibrary loan (ILL) requests have also significantly decreased since the introduction of online journals, $F(2,30) = 4.46$, $p<0.02$.

Conclusions: The decrease in use of the print collection suggests that many patrons prefer to access journals online. The negative impact the online journals have had on the use of the journal titles available only in print suggests users may be compromising quality for convenience when selecting journal articles. Possible implications for collection development are discussed.

Study 2 :
"Awareness and Use of Online Resources" will be submitted for publication in the future.

Purpose: To identify users of the online journals and resources and patterns emerging among different user groups.

Setting: Same as previously described above.

Methodology: A survey measuring electronic resource awareness, online database use, and journal usage (print/online) was sent to UIC Peoria full-time faculty, medical students, medical residents, and graduate nursing students.

Results: Forty-one percent of the surveys were returned. Most users indicated they used the online databases for research and patient care. All user groups with the exception of nursing students, searched MEDLINE on a weekly basis. Although Journals@Ovid was used weekly, few user groups were aware of or used other available online journal collections. The majority of users preferred to access journals online as opposed to print when possible. While nursing students, medical students, and residents were most likely to access the online resources from their home or the library, faculty were most likely to access the online resources from their office/lab.

Conclusions: Users are unaware of many available online resources and journals making the promotion of library resources more important than ever. Most users prefer to access the resources remotely and online when possible. It appears convenience plays a role in the choice of using online resources. •

Evaluating the Evidence: Creation of Gold Standard Practices for Searching and Filtering the Biomedical Literature

Authors: Rebecca N. Jerome, M.L.I.S., Coordinator, Clinical Informatics Consult Service; Kimbra Wilder Gish, M.S., Administrative Librarian; Taneya Y. Koonce, M.S.L.S., National Library of Medicine Associate Fellow; Nunzia B. Giuse, M.D., M.L.S., Director, Eskind Biomedical Library, Vanderbilt University Medical Center, Nashville, Tennessee.

Purpose: Describe a foundational philosophy for developing and sustaining a gold standard practices approach to searching and filtering the biomedical literature.

Setting: While incorporating evidence into practice and optimizing resource utilization are important concerns in today's healthcare climate, the proliferation of the medical literature presents a significant challenge to clinicians in assessing evidence for best practices. This large academic health sciences library facilitates the integration of information into the Medical Center's processes and practices through the librarians' provision of customized, filtered information packages for clinical and research teams.

Background: As we attempt to expand librarian expertise into settings beyond the library's walls, it is essential to guarantee a level of competency embraced by all librarians. To achieve this goal, the library has developed two professional conferences as a mechanism for the dif-

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fusion of searching and filtering skills among all librarians: SearchTalk and the Filtering Teaching Conference (FTC). In SearchTalk, librarians meet bimonthly to explore resources in response to actual clinical and research questions and develop gold standard search strategies for each question; three key articles are selected from the gold standard's results and distributed for discussion later in the month at the FTC meeting. The FTC adapts the SearchTalk model to the development of gold standard practices for evaluating study design, weighing evidence provided by articles, and summarizing information properly. In both conferences, the gold standard is not generated by an individual but by the whole team via consensus. Rather than two or three experts operating in isolation, these sessions have made it possible over the last two years to increase the competency of all librarians in these areas.

Methods: This study represents a preliminary examination of SearchTalk and FTC individual efforts as compared with the gold standard consensus of each meeting. For the 2000-2001 academic year, investigators collected search strategies, article summaries, and filtered articles from 14 participants; one participant did not participate in the March SearchTalk and FTC sessions, leaving 13 participants for this session. The investigators examined data for three selected sessions of the paired conferences: our first meeting of the year in September (clinical research question), our middle meeting in December (clinical cardiology question), and our final meeting of the academic year in March (genetics question). Each individual's search strategy was executed in PubMed and examined for retrieval of the three articles selected for the FTC from the gold standard results. To examine the FTC session data, two individuals reviewed the gold standard filtering of one article for each FTC and noted key article features. The two lists of key features were compared and discussed until consensus was reached. Each participant's filtering was then rated against the gold standard using a checklist of these key features.

SearchTalk results: In comparing searching performance between the September and March sessions, overall progress toward agreement with the gold standard consensus was clearly evident. The September data included 14 participants, three of whom retrieved all three of the gold standard articles, five of whom retrieved two of the gold standard items; the March data included 13 participants, five of whom retrieved all three gold standard articles, five of whom retrieved two of the gold standard items.

Filtering results: A definite trend in improvement was evident among the attendees in overall percentage agreement with the gold standard filtering for each selected session. Of the six individuals who had not previously participated in filtering exercises, the data indicated a steady improvement toward consistency with the gold standard; however, a drop in performance was noted for some with the genetics question in March, indicating a lack of comfort with this subject area. This subject knowledge base effect was even more striking among some of our more experienced participants. Several of these individuals maintained a fairly consistent level of agreement with the gold standard for the March question, but several participants demonstrated a clear drop in performance despite previous improvements, largely explained by a lack of comfort with the genetics subject area. There was a different subject knowledge base effect in two additional participants: these individuals rarely deal with clinical questions and demonstrated an obvious drop in comfort when dealing with the clinical question from the December meeting. In addition to the general improvement among the participants, the clear impact of the subject knowledge base on individuals' performance was striking. (For display of the result tables, see http://www.mc.vanderbilt.edu/biolib/staff/filteringpres.html)

Future directions: Beyond this preliminary analysis of the SearchTalk and FTC data, the investigators will carefully analyze all data collected during this academic year to better understand both individual and group trends. In addition, the authors hope to repeat this study with clinicians engaged in undertaking the same process.

Conclusions: By promoting gold standard practices for staff searching and filtering of the biomedical literature, participation in these sessions equips librarians to function as proactive, trusted members of clinical and research teams. While the librarians may initially have disparate levels of skills, these conferences reduce variance among individual proficiencies. •

Accessing the Most Recent Information

Author(s)Affiliation(s): helen-ann brown, Kristine Alpi, Daniel Cleary, Information Services, Weill Cornell Medical Library, New York, NY

Purpose: Determine which of four online resources offers access to the citation data of the most recent journal issue.

Setting/subjects: The study compared four online resources for accessing the content of recent journal issues: electronic journals direct from the publisher, PubMed, Ovid PREMEDLINE, and CURRENT CONTENTS® connect. Seven journals of four varying frequencies were selected for sampling: weekly (New England Journal of Medicine and JAMA), biweekly (Circulation Research), monthly (Annals of Thoracic Surgery and Netherlands Journal of Medicine), bimonthly (Current Opinion in Development and Genetics), and quarterly (Quarterly Reviews of Biophysics).

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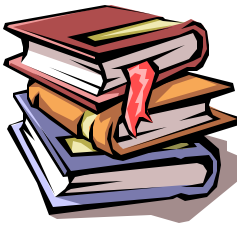

Literature Review

—Submitted by Ruth Fenske, Ph.D.

Rogers, Sally. Electronic Journal Usage of Ohio State University. *College & Research Libraries*. 62(1):25-34, January, 2001.

Bauer, Kathleen. Indexes as Tools for Measuring Usage of Print and Electronic Resources. *College & Research Libraries*. 62(1):36-42, January, 2001.

The January, 2001, *College & Research Libraries* contains two articles which use descriptive statistics to document the decline in use of print and the increase in use of electronic resources.

Rogers, at Ohio State University, bought five questions on the OSU poll, an annual survey of the campus community, conducted by the College of Social and Behavioral Sciences Center for Survey Research. Surveys are done via telephone and e-mail. Participants were randomly selected from among graduate and professional students and faculty. Frequency of use questions were asked in 1998 when 200 journals were available online in 1999, and in 2000 when the number had grown to 3300. By 2000, 53.9% of faculty reported daily, weekly, or monthly use of e-journals and 54.3% of graduate students. It should be noted that access to e-journals at OSU is the Electronic Journal Center feature of OhioLINK. The Electronic Journal Center offers a uniform mode of access to 3300 journals, thereby possibly increasing use of electronic journals because users have only to master one mode of access. The authors fail to bring out this important point. Print journal use decreased to 65.6% of faculty and 55.2% of graduate students. These results show that e-journals are being used more and print journals less. It does not tell us if faculty and graduate students are substituting use of the electronic version of any particular journal for use of print of the same title. Hence, the results are useful for tracking general trends but not in making cancellation decisions.

At the Yale Cushing/Whitney Medical Library, Kathleen Bauer developed two indexes to describe change in use of print and electronic resources. Server log and publisher counts give diverse statistics on electronic resource use. Indexes can be used to compare changes in very different numbers and to combine many data points into one number. Bauer's Electronic Usage Index combines data on use of electronic textbooks and Ovid full text use. Ovid titles are popular and important journals. The Print Usage Index is books circulated and photocopies made. Electronic sources tend to be very current whereas print material may be any age. Bauer explains that these factors could make her results misleading. Although she says the "level of accuracy of the indexes remains a question for further study," she concludes users have "overwhelming preference for digital materials."

Although Bauer's tends to be a more credible measure of use, because it is based on actual use rather than subjective estimates of use, neither study gives a definitive answer to the print cancellation question.

Hernon, Peter. Editorial: Components of the Research Process: Where Do We Need to Focus Attention? *Journal of Academic Librarianship*. 27(2):81-89, March, 2001.

Peter Hernon, editor of the *Journal of Academic Librarianship*, calls on his twenty years of experience as an editor, to present some "random thoughts" about library research. One of his concerns is how the components of the research process "bond together" within a study. He divides the research process into five components: (1) reflective inquiry, (2) procedures, (3) gathering, processing, and analyzing data, (4) reliability and validity, and (5) presentation of findings.

Reflective inquiry includes deciding what is to be studied and forming research questions or an hypothesis. In addition to the usual discussion of the problem statement, literature review, theoretical framework, and research questions or hypotheses, he also suggests outlining a "logical structure" and objectives. The structure is a diagram which shows how the components and variables "fit together logically and conceptually." It is the who, what, when, where, and how. Objectives define the scope of the project as well as what would not be studied.

He points out that the importance of the presentation of findings is often underestimated. A specific piece of advice is to "present the components of the research process clearly and fully and ensure a strong bond between them."

Next he makes some miscellaneous points. He asks how an appropriate sample can be drawn from an unknown population, such as users of a web site. He advocates increased use of cluster samples and more research which uses multiple methods in one study. In this time of outcomes assessment, librarians need to know more about experimental design to guide their assessment activities. He talks about response rates and self-selected samples. Research on methods of research is needed. More frequent and better problem statements are needed, and citations should be more accurate. He presents his own list of topics in library and information science needing investigation. He ends by asking LIS journal editors to hold authors to higher standards.

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(Literature Review—Continued from page 15)

White, Marilyn Domas. Diffusion of an Innovation: Digital Reference Service in Carnegie Foundation Master's (Comprehensive) Academic Institution Libraries. *Journal of Academic Librarianship*. 27 (3):173-187, May, 2001

Marilyn White, faculty member at the University of Maryland College of Information Studies, analyzes digital reference service (DRS) at undergraduate and master's institutions using Rogers' diffusion of innovation theory. Her focus is on institutional adoption, not adoption by individuals. DRS is "an information access service in which people ask questions via electronic means (e.g. e-mail or web forms)." Responses are transmitted by electronic means. By her definition, DRS is not necessarily real time or even near real time reference service. Data were gathered in 2000 by looking at library web sites for electronic reference and by taking data from the 1996 U. S. National Center for Education Statistics (NCES) fall survey of academic libraries questions on e-mail reference and other matters and from the NCES 1996 fall enrollment data. Statistical tests were used to identify significant differences among adopter categories. Content analysis was applied to the electronic reference parts of library web pages.

Forty-five percent of the undergraduate and master's level institutions had some form of DRS. Twenty-eight percent had DRS in 1996 and are considered early adopters. Over half still were not offering DRS in 2000 (non-adopters). (In contrast, she cites data indicating that 80% of Association of Research Libraries members had electronic reference in 1996 and 96% in 2000.) All institutions were compared on enrollment, financial resources, staff resources, degree of acceptance of computers for information access, and existing demand for services. She found that early adopters differed from non-adopters on all these variables.

White also looked at the name of each service, its prominence on the library's web site, clientele served, types of questions considered, and the reference interview or its equivalent. Most frequently, service was limited to those affiliated with the home institution. Some would not answer legal or medical questions. Few indicated the possibility of a reference interview. Some did ask a series of questions that helped clarify the question. She points out that "more personal information is elicited than is required to answer questions effectively," raising serious questions about privacy. If we don't ask these questions at the reference desk, why do we ask them here?, she asks.

Medical libraries were early adopters of online database searching. Have we, as a group, been equally early in adopting DRS? Users of health sciences libraries often submit requests by telephone. Answers are often sent back by e-mail to avoid telephone tag. Users have no way to verify that requests submitted by e-mail have actually been read, making e-mail submission less appealing. Have some health sciences libraries moved into real time DRS such as videoconferencing or chat? It would be interesting to see if medical libraries were early adopters of DRS, if DRS services are used, and if we now are moving into real time DRS.

Meyer, Richard W. A Tool to Assess Journal Price Discrimination. *College and Research Libraries*. 62 (3):269-288, May, 2001.

In this study, Richard Meyer builds an ordinary least squares regression model which predicts institution price for a journal. A measure of the monopoly power of the journal is also a dependent variable. Twenty-four independent variables are used.

Most independent variables were suggested by previous studies. He adds electronic availability to the list and cites economic theory which led him to believe that price and monopoly power will be lower when a journal is available in electronic form. Electronic availability is seen as "barriers to entry" are diminishing. For instance, it was easy for competitors to make personal computers using IBM architecture. Therefore, IBM-type computers were less expensive than they would have been without competition. However, it seems to me that journals in electronic format are not competitors in the same sense, because they are made and sold by the same publisher as the print version.

Data on the 859 periodicals subscribed to by Trinity University were fed into the model. Over 80% of the variation in institutional price was explained by the twenty-four variables and 64% of the variation in the measure of monopoly power. In all cases, except for the availability of the journal in electronic format, variation was in the direction predicted by the author. Some of the relationships were statistically insignificant. The major conclusion is that "librarians can likely expect to see prices continue to increase and monopoly power extended as publishers introduce electronic versions of their products."

Finally, Meyer lists the twenty titles for which institutional price is statistically significantly higher than predicted by the model. *Journal of Econometrics*, published by Elsevier was the most overpriced (by 295%). All overpriced journals were math, science, or psychology journals.

The strength of this paper is the careful explanation of each independent variable, its predicted effect on the dependent variables, and difficulties in determining valid values for some of the variables. Even though he explains some of the econometric theory, the article is not easy to follow on a first reading by someone not well versed in economics. Although the results do not add

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ORIGINAL RESEARCH

Faculty Publication Analysis: What Journals Do They Need?

—Submitted by Elizabeth H. Wood, MA, MSLS, AHIP

Two analyses of faculty publications, one in 1988 and another at a different institution in 2000, convinced this author that this can be a very useful exercise[1-2]. (An analysis has also been used for a doctoral dissertation, correlating the size of library collections with faculty publication patterns[3].) Here is a brief discussion of how this may be done and what the benefits are.

Purpose

Is your Collection Development librarian deluged with requests for new subscriptions? Do departments on campus vie with one another for your serials budget? Why do they ask for particular titles? Where do they publish their own work? What journals do they cite? Who cites them?

Are reference librarians sufficiently conversant with the research being done on campus? Do they have personal contact with faculty? Relationships may be strengthened if librarians take the time to investigate what is being published.

An analysis of where faculty publish, whom they cite, and where they are cited can be used:

- as an additional factor in the decision matrix for serials collection development;
- to assist in decisions about storage or access to older materials that faculty are using;
- as evidence for faculty that you have researched where they have published;
- to advertise faculty materials in library newsletters or displays;
- to provide faculty with citation reports of where their work has been used.

The analysis can be done either as a one-time retrospective survey of past faculty publications, or as on-going, regular searches using a saved strategy. Regular searches can be used to see what faculty are doing, and this can be announced in a newsletter or on a bulletin board or Web site. Public Relations or similar departments may already collect this information from faculty, or may be happy to receive it from the library. The data collected can be systematically added to the on-going matrix for collection development decisions.

Methods

ISI

For a major, one-time retrospective survey, the most comprehensive retrieval in the biosciences probably comes from having the Institute for Scientific Information (ISI) do the search. This is not cheap, but libraries can join forces to share the cost.

Libraries with subscriptions to ISI can do the search themselves using whatever databases they have purchased. Either having ISI do the search or using subscriptions, the search will retrieve not only the articles written by faculty, but also who has cited them. Faculty, and institutional administration, may be very interested in this latter feature.

Bibliographic databases

If neither of these approaches is feasible, a more limited method is to search MEDLINE, CINAHL, and other databases relevant to the faculty's fields of interest. Compiling a list of faculty names and searching the author field is very time-consuming if not impossible in larger libraries, but the institutional address field can be used. The advantages of this kind of search are that it is cheap, relatively easy, and will provide useful data. The major limitation to this approach is that it will be far from comprehensive. However, even if only a portion of the faculty's work is identified, the data are still very useful and interesting. Limitations include:

- not all journals provide the address to the databases;
- databases do not provide addresses for every journal;
- only the first author's address will be found;
- faculty may have joint appointments and list alternative addresses;
- the search is limited by the proprietary databases available to the searcher;
- authors themselves, or journal policy, may vary the way the name appears.

The last point brings up a practical issue: the format of this field. It is taken directly from the article and therefore has no regularity or consistency. Sometimes complete street addresses are provided, with postal zip codes, and sometimes email. The department but not the overall

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Faculty Publication Analysis — Continued from Page 17)

institution may be listed. Abbreviations of institutions and parts of addresses vary. Some complicated nesting of Boolean operators may be necessary to cover all the possibilities. In the following example, note the omission of unnecessary words such as *los* or *university* and truncation ($) of zip codes. The truncation symbol and field tag *.in.* will be different according to the interface. Keep in mind that many institutional names may share the same abbreviation.

(usc.in. and angeles.in.) or (southern california.in. and angeles.in.)

howard hughes.in. and (hopkins or baltimore).in.

wisconsin madison.in.

(va.in. or veterans.in.) and (portland.in. or 972$.in. or oregon.in.)

Full text databases

The increasing collections of full text journals that libraries now make available online provide the next piece of the analysis: whom the faculty cite. Whether they cite articles in other languages, and how far back in time, can be useful in decisions about retention of foreign or older material. In 1988, this author took a random sample of articles, photocopied bibliographies, and typed references into database management software. How far we have come!

Data Collection and Analysis

Personal filing software can be used to download the retrieval. This is less cumbersome than using word processing and means that separate fields can be more easily analyzed.

Lists of the retrieved authors' names can be compiled at this point to do further searching. They can also be sorted by campus department and subject.

The lists of journal titles can now be compared with:

- library holdings;
- regional holdings;
- Interlibrary Loan requests;
- faculty requests;
- shelving statistics.

Questions that can be asked at this point include:

- Which titles are not held by the library?
- Of these, which have faculty requested?
- What is the correlation between faculty who published and those who requested?
- Which titles cited by faculty are not held by the library?
- Of these, which were requested by faculty?
- Of the cited titles, what were the subjects, languages, and date spread?
- What is the correlation between published titles and titles cited?
- Which schools or departments are represented?

An interesting finding by this writer is that in the study done in 1988, the date spread was large, including references from the 19th century. A much more recent study revealed relatively few references before 1966 – the beginning of most of MEDLINE. It seems that faculty are now doing their literature review online, rather than stalking the stacks or thumbing printed indexes.

Conclusions

Comprehensive journal collections shelved conveniently in one place are becoming a dream. Libraries have to deal with shrinking budgets, lack of space, and concomitant faculty displeasure. Analysis of where faculty publish and what journals they use for reference can help assure that the library keeps what they need—and persuades faculty that their interests are being carefully considered. •

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Thank You!
Kristin Stoklosa
For all your wonderful work
with the Section's Web site

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Allan Barclay—UW Madison
New Section Web Editor

Welcome!
Ellen Detlefsen, DLS—University of Pittsburgh
New Hypothesis Editorial Board Member
~ and ~
New Column Editor: Library and Information Science School Research Column

(Literature Review—Continued from page 16)

much to our knowledge base, the article does pull together previous results on factors which influence institutional prices for journals.

Gottlieb, Lisa and Juris Dilevko. User Preferences in the Classification of Electronic Bookmarks: Implications for a Shared System. *Journal of the American Society for Information Science and Technology*. 52 (7):517-535, May, 2001.

Fifteen Master of Management and Professional Accounting students at a Canadian university were given a list of hyperlinks to 60 financial industry web sites and asked to bookmark the sites and file the bookmarks into folders. Individual questionnaires were created for each participant, based on his/her own particular classificatory decisions. Examples of three such questionnaires are given as an appendix.

The literature review and discussion make particular reference to Barbara Kwasniak's work on how individuals organize papers in their office and Barreau's extension of Kwasniak's work to electronic personal information management systems. Eighty-nine separate classificatory decisions were analyzed. Each decision could yield more than one classificatory attribute. Classificatory attributes were categorized as context, content or other. Context decisions go beyond the bookmark itself. An example is how the bookmark will be used. Content has to do with the topic(s) covered by the web site. "Other" covered situations in which the subject could not recall why a decision was made or was vague about the reason. Six subcategories of context, four of content, and three of other are defined.

There was a total of 138 classificatory attributes. Almost 62% were content, over 21% were context, and over 17% were other. Over 48% of the questionnaire responses cited content only and 23.6% were based on a combination of content and context. Kwasniak found that both content (her term was document attribute) and context (situation) attributes influences classificatory decisions in a paper office, with situation being somewhat higher (33.3% vs 29.4%). Since Kwasniak's professor subjects were classifying their own papers, perhaps it was easier to cite a context than it was for students to classify an assigned set of bookmarks. Barreau also found topic to be of prime importance in classificatory decisions.

One of the motivations behind this study was to examine individual classificatory decisions in order to inform design of a multi-user system of classification for a set of bookmarks. Although content influenced the majority of decisions, different users assigned different topical labels to the same web site. Hence, individual differences make design of a multi-user classification system, based on content, for a set of bookmarks difficult. One might ask if medical or nursing students or health professionals would make more uniform classificatory decisions for a set of bookmarks due to a possibly greater use of classification in training and work in the health professions, as opposed to training and work in the financial industry. •

(MLA Research Awards — Continued from page 14)

Methodology: Longitudinal cohort study. Nineteen samples were taken on Fridays between Sept. 2000 and April 2001.

Results: Access to information was measured in two ways: 1) percentage of times the system had the most recent issue's citations and 2) number of issues behind the most recent issue. Electronic journals direct from the publisher offered access to the most recent information in both measures, being recent 95.5% of the time and almost never (0.03 of an issue) behind. The others provided the most recent issue the following percentages of time: PubMed (54.0%), Ovid PREMEDLINE (30.8%) and CURRENT CONTENTS® connect (24.8%). In the number of issues behind measure, PubMed averaged 0.67 of an issue behind, while Ovid PREMEDLINE (1.03) and CURRENT CONTENTS® connect (1.08) came in about one issue behind. Analysis by journal frequency shows fluctuation in the results for weekly journals.

Discussion/conclusion: The need for up-to-the minute literature for research and patient care remains. Libraries need to find less costly ways to deliver timely information. Access to citations and abstracts from electronic journals may often be free. Electronic journal subscriptions vary in price, but provide the timeliest information. The second most timely resource, PubMed, is free and is updated daily. With the need for timely information and limited funds these findings may help librarians allocate scarce resources. •

Happy 20th Anniversary!
MLA Research Section
1982—2002

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