HYPOTHESIS
THE JOURNAL OF THE RESEARCH SECTION OF MLA

Contents

HYPOTHESIS:
The Journal of the Research Section of MLA
VOLUME 18, Number 1
Spring 2004

An Introduction to Computer Assisted Qualitative Data Analysis Software

--by Kristine M. Alpi, MPH, AHIP

Information professionals collect a variety of data that could benefit from qualitative analysis. Open-ended survey questions, focus group transcriptions, and interview notes are just a few data sources which can be analyzed using computer assisted qualitative data analysis software (CAQDAS). A variety of free and commercial programs are available. This introduction invites information professionals to explore the possibilities of using CAQDAS in their work.

Types of research that utilize CAQDAS

Qualitative research can garner meaningful findings from studies with a small number of participants. Qualitative techniques can be especially useful in initial stages of program development such as planning and process evaluation. Qualitative research employs both manual methods and computer-assisted methods. Types of research or activities that have applied CAQDAS include:

- content or media analysis to identify themes or word frequencies in publications[1]
- analysis of text in email messages or free-text survey responses
- field investigation/ethnographic observation or notes from interviews or focus groups
- thematic indexing and description of conferences papers or other publications[2]

Acceptance of CAQDAS varies across disciplines. A study comparing manual and computer-assisted techniques suggested several benefits to using software as well as some caveats. By providing a structure and a trail to follow, the software user can make the intellectual process of categorizing and indexing specific. Resulting data is neat, compact and easily portable. Manually indexed data is less accessible to a team, and not as

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

HYPOTHESIS (ISSN 1093-5665) is the official journal 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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Chapter Research Committees Report

— submitted by Molly R. Harris

South Central Chapter of the Medical Library Association Annual Meeting 2003 ~ Research Award Results ~

Members of the South Central Chapter (SCC) Research Committee joined with members of the SCC Awards and Scholarship Committee to judge a total of 31 entries (12 contributed papers and 19 posters) in the Research Awards competition, which was held at the SCC/MLA Annual Meeting on October 5-6 in Shreveport, LA. Awards for each division were presented at the Business Meeting to the 1st, 2nd, and 3rd place winners, as well as two Honorable Mentions. South Central Academic Medical Libraries (SCAMeL) contributed cash awards to the 1st –3rd place winners in each placing category in the following amounts: Papers: 1st place: $300; 2nd place: $200; 3rd place: $100. Posters: 1st place: $200; 2nd place: $100; 3rd place: $50.00. Here are the results of the competition:

CONTRIBUTED PAPERS

1ST Place
Critical Care Nurses' Information Behavior: A Grounded Theory Model from Observation

Michelynn McKnight, AHIP; Candidate, Interdisciplinary PhD in Information Science, University of North Texas; Director, Health Sciences Library, Norman Regional Hospital, Norman, OK

Abstract:

Purpose: Develop a grounded theory model of on-duty critical care nurses' information behavior

Setting: A 20-bed critical care unit (with a staff of 58 RNs) in a 250-bed community (non-teaching) hospital

Participants: One observer-participant (a researcher trained in health information science) and six RN participants (The RN participants were a representative sample of the staff in education, experience, age, gender and ethnicity.)

Methodology: The observer-participant accompanied each RN participant for an entire shift, taking extensive shorthand notes on the nurse's information behavior and occasionally participating in patient care activities. At the end of each observation, the observer-participant audiotaped an interview with the participant RN. The observer-participant transcribed the notes and interview and the RN participant reviewed the transcript. The researcher analyzed this data with the aid of N6 qualitative research software, coding for more than 100 discrete concepts.

Results: A grounded theory model that describes and clarifies the information behavior of the nurses observed.

Conclusions: This model can help redesign nurses' information systems in social, written and automated contexts.

2nd Place
Medical Students and Consumer Health Information

Debra Warner, RAHC Library Director and Assistant Library Director for Valley Services, University of Texas Health Science Center at San Antonio, Harlingen, TX; and Cynthia Olney, PhD, Evaluation Specialist, University of Texas Health Science Center at San Antonio, TX

Abstract:

Purpose: This paper will report on the results of the medical student training phase of the Texas Lower Rio Grande Valley (LRGV) Health Information Hispanic Outreach project at the University of Texas Health Science Center at San Antonio (UTHSCSA). The goal of this project was to integrate consumer health information resources, specifically Hispanic and Spanish language resources, into the curriculum. The project also assessed the role of the librarian in increasing awareness, access, and skill for students, residents, and faculty.

Setting/Participants/Resources: Twenty-four medical students doing their third-year clerkship rotations were given information on how to use MEDLINEplus and other high quality consumer health information in both Spanish and English. Students were participating in a longitudinal curriculum in a primary care setting that required them to interact with community members in clinics and agencies throughout the LRGV.

Results/Outcome: Before the training, students ranked their use of health information, the barriers they identified in the community, the most frequent sources of information used by patients, and the resources that they used most often.

After the training, librarians surveyed the students to find out how often they used the new resources and what the outcomes were. Students used the resources for creating pamphlets and giving presentations. The survey showed that more than half the students had used the information for themselves, a patient, or to show another physician.

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Evaluation Method: Pre- and post-tests identified the students' attitudes about the use of the resources. A final online survey asked them to tell us about their use of the resources. Standard course evaluations were used to evaluate the role of the librarian in the training.

3rd Place:
You Call That Teaching?
Effectiveness of a Problem-Based Learning Scenario in Improving the Information Seeking Skills of Third-Year Medical Students

Daniel E. Burgard, MSLIS, Instructional Services Librarian; and Catherine Rhodes, MLIS, Instructional Services Librarian; Gibson D. Lewis Health Science Library, University of North Texas Health Science Center at Fort Worth, TX

Abstract:
Many medical schools are instituting programs of problem-based learning in which students perform independent, self-directed study coupled with follow-up group discussions meant to refine the learning process. Librarians at the University of North Texas Health Science Center are working closely with faculty to bring the problem-based teaching method to the realm of information seeking skills. As part of a required ten-day clinical skills course, students entering their third year will be given a patient interaction scenario, based on a CATCHUM Project model, that requires them to search the medical literature and to locate patient education materials. No instruction will be given to the students before they begin their searching. The scenario asks students to email their search history, selected citations, and article analyses to the librarian facilitators in sequenced segments. At the end of the course, students will be brought back for facilitated sessions in which they will receive their instruction in the form of feedback and search demonstrations. In order to measure the effectiveness of this mode of instruction, students will complete online pre- and post-tests and will be required to conduct the same sample search at both the beginning and end of the process. The sample searches will be recorded by screen capturing software and will be compared to the individuals' perceived levels of knowledge from the pre- and post-tests. The study will seek to measure any change in the students' information seeking skill levels as well as to measure differences in the students' perceived versus actual skills.

Honorable Mention
Consumer Health Information Provided by Library and Hospital Websites in the South Central Region – A Quantitative and Qualitative Analysis

Pauline Fulda, MS, AHIP, Associate Director; and Hanna Kwasik, MLIS, AHIP, Serials Librarian; Louisiana State University Health Sciences Center Library, New Orleans, LA

Abstract:

Objective: To determine if selected libraries and hospitals in the South Central Region provide consumer health information through Websites and the type, quality, and quantity of the resources provided. The paper presenters examined a number of factors on each Website including the following:

Existence of a designated consumer health section

Special funding to support the development of the consumer health section on the Website

Unique resources provided

Most frequently listed sites

Presence of the MLA "top ten" most useful Websites

Display of sites' compliance with information quality standards

Setting: The following Websites were analyzed: Sixteen regional medical libraries, three access libraries, five state libraries of Texas, Arkansas, Louisiana, New Mexico, and Oklahoma, and twenty-five selected hospitals in the five-state region.

Methodology: During a specific time period in early 2003, a careful quantitative and qualitative analysis of selected Websites was conducted and data compiled.

Results: Major findings of the analysis will be presented in narrative form. Descriptive statistics will be organized into summary tables and graphs.

Discussion/Conclusion: The implications of the findings of this study may offer libraries guidance in designing Websites to better meet consumer health information needs.

POSTERS

1st Place
Analysis of Web Site Usability Testing: User Behavior vs. Comments

Anne B. Howard, Reference and Educational Services Librarian; Julie M. Trumble, Head of Reference and Educational Services; and Janet Burk, Reference and Educational Services Librarian; Moody Medical Library, The University of Texas Medical Branch, Galveston, TX

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(Chapter Report — Continued from page 4)

Abstract:

Purpose: This poster reports on a web site usability study conducted to determine whether users can easily and successfully accomplish tasks on a new web site. User verbal comments and written responses are compared to captured performance on the site.

Setting/Subjects: A new unit, Academic Resources, was created to integrate the management, operations, and services of the Moody Medical Library (MML), Academic Computing, Biocommunications, and the Learning Resource Center. A web site was developed to provide unified access to all of the departments. The test was conducted in MML's computer classroom. Eleven faculty, students, and staff, representing the areas of University of Texas Medical Branch's mission of education, research, and patient care, were recruited to participate

Methodology: Participants will be given twelve tasks, each with a set of summative questions. Afterwards, participants will complete three general questions about the experience. User performance will be recorded with Techsmith's Camtasia. Camtasia is software that captures all keystrokes and mouse movements. It also records verbal comments made during the test. Several librarians will independently watch the Camtasia videos and record behavior using a standardized form. Interrater reliability will be measured and reported.

Results: The study is in progress. Results will be reported at the annual meeting.

Conclusion: Conclusions will be reported at the annual meeting

2nd Place:
Health Information for Consumers:
A Study of Selected Hospital and Library Websites in the South Central Region

Pauline Fulda, MS, AHIP, Associate Director; and Hanna Kwasik, MLIS, AHIP, Serials Librarian; Louisiana State University Health Sciences Center Library, New Orleans, LA

Abstract:

Objective: To determine if selected hospitals and libraries in the South Central Region provide consumer health information through Websites and the type, quality, and quantity of the resources provided. The poster presenters examined a number of factors on each Website including the following:

> Is there a designated consumer health section on each Website?
>
> Was there special funding to support the development of the Website?
>
> How many unique resources are provided?
>
> What are the most frequently listed sites?
>
> How many of the MLA "top ten" most useful Websites are included?
>
> How many listed sites are approved by information quality standards organizations?

Setting: The following Websites were analyzed: Sixteen regional medical libraries, three access libraries, five state libraries of Texas, Arkansas, Louisiana, New Mexico, and Oklahoma, and twenty-five selected hospitals in the five-state region.

Methodology: During a specific period in early 2003, a careful quantitative and qualitative analysis of selected Websites was conducted and data compiled into descriptive statistics.

Results: Major findings of the analysis will be presented in graphical and descriptive form.

Discussion/Conclusion: Libraries have an ongoing mission to function as aggregators of accurate and timely consumer health information on the Internet and to provide access to the information through their Websites. The implications of the findings of this study may offer libraries guidance in designing Websites to better meet consumer health information needs.

3rd Place
To Banner or Not To Banner?
User Research on a Web Marketing Tool

Sharon Giles; Helen Mayo; Herldine Radley; Therona Ramo; and Joseph Tan; University of Texas Southwestern Medical Center at Dallas Library, Dallas, TX

Abstract: To use or not to use Web banners? If we use them, then in what form? And to what extent? These were the specific questions that the UT Southwestern Library's Web Services Unit (WSU) and Marketing Team needed answered when they envisioned extending the marketing power of Web banners to all library pages, including the home page.

Strong contrasts in staff opinions on the desirability and effectiveness of banners prompted the interested parties -- in collaboration with the Virtual Library Content Team -- to design research to find out possible user reactions and preferences.

Initially, a survey was administered in both paper and Web formats to determine not only users' reactions to

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South Central Academic Medical Libraries (SCAMeL) Award Grant

-submitted by Martha R. Harris

The Research Committee of the South Central Academic Medical Libraries (SCAMeL) consortium has awarded a one-year SCAMeL grant to Pauline O. Fulda and Hanna P. Kwasik from the John P. Ische Library, LSU Health Sciences Center-New Orleans. The $1,549.00 personal grant is being used to fund a study entitled **"Mentoring in the South Central Chapter: A Needs Assessment Study Surveying All SCC Members."**

The objective of the study is to investigate the potential need for a formalized mentoring program among the members of the South Central Chapter (SCC) of the Medical Library Association in support of MLA's mentoring initiative. Since no formal mentoring program currently exists within the SCC, it is important to assess the needs for a formal program as perceived by the Chapter members. The recipients of the award will collect data by using an anonymous survey questionnaire that was mailed to all SCC members in January 2004.

After the data is received, compiled, and analyzed, the research investigators will submit a detailed final report to the SCC leadership. In addition, a flyer with the results will also be distributed to the Chapter members.

The investigators anticipate that the study findings will provide direction or re-direction for future projects, initiatives, and educational programs. The authors of the study also desire to foster a heightened awareness among Chapter members of their own mentoring needs and activities through participation in the survey.

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banners on the home page and other library pages but their opinions on the design of banners. A follow-up Web survey asked for feedback on an actual working banner.

The survey results and subsequent decisions of Library staff may surprise you.

Honorable Mention
Visual Technologies to Enhance the Library's Mission: The Wheeler Collection of Medical and Pharmacy Realia

Margaret Vugrin, MSLS, AHIP, Reference Librarian/ Clinical Medical Librarian; Richard C. Wood, MLS, Executive Director of Libraries, Texas Tech University Health Sciences Center; Hershel Womack, Photocommunications, School of Mass Communications, Texas Tech University; and Ed Youngblood, PhD, Electronic Media & Communications, School of Mass Communications, Texas Tech University, Lubbock, TX

Abstract:

The TTUHSC Library was endowed with a significant collection of medical and pharmacy realia. Having a librarian/photographer/graphic designer on staff enabled us to professionally photograph, design and create advertising materials for this collection. This process of creating visual (professional photographs), informative (designing and printing a brochure and poster) and electronic (interactive CD, and development of the virtual collection) materials will be presented in an electronic format. The classic librarian role is changing. Librarians have always been in the forefront of technology and digital information. Interactivity with other classically non-library areas of expertise enables us to creatively display, disseminate and use health sciences materials in new and different ways. This project and the enthusiasm it has generated presents the expansion and evolution of the role of the librarian using visual technologies to enhance the mission of the library. ?

International Research Reviews

-submitted by Anne Brice

The information needs of nurses have been explored many times, and research shows us that although the problems they face are well documented, access issues, time constraints and lack of skills still provide considerable barriers to the implementation and support of evidence based practice (1). In a community or primary health care setting these issues are further compounded, yet health care policies are placing a high premium on promoting a greater emphasis on the need for evidence based decision making. The following abstract provides some useful insight into the relationship between nursing decisions and the research evidence.

The Potential for Evidence Based Primary Care Nursing: Clinical Decisions and Research Information Use by UK Primary Care Nurses

Authors: Carl Thompson, Dorothy McCaughan, Nicky Cullum, Trevor Sheldon, Pauline Raynor.

Background and Research Questions:
The idea of nurses as active decision makers attaching due weight to research evidence in the process of reaching informed clinical judgements is central to the UK government's and nursing profession's plans for developing the nursing function in a modern health service. The study addressed the following questions – the answers to go some way towards establishing the potential for evidence based practice amongst primary care nurses:

1. To what extent does nursing in primary care settings involve making clinical decisions, which can usefully be informed by research evidence?

2. What are the perceptions of nurses in primary care regarding the need for research evidence to support clinical decision-making?

3. How do primary care nurses access research based information?

4. What are the perceptions of nurses regarding the barriers and obstacles to successful access and use of research-based information?

Methods
A case study design provided the framework for the collection of both qualitative and quantitative data. Data collected included the results of semi-structured interviews with 82 nurses, 270 hours of non-participant observation, and documentary analysis of material available in the clinical environment. Q methodological modelling was also used to identify the shared values around which people coalesce with regard to the accessibility, usefulness and barriers associated with research based information. One hundred twenty-two nurses completed the 3 Q sorting exercises involved. Demographic predictors of association with these shared values were developed from a series of regression models. Qualitative data was analysed using the broad principles of grounded theory and constant comparison. Data analysis was facilitated by the use of the QSR N-Vivo programme.

Results
The majority of decisions that nurses make in primary care can be reliably captured in a seven-fold typology (table 1).

Table 1: Typology of Decision Types.

1. Service Delivery Organisation or management
2. Referral
3. Assessment (as in decision to assess/what modes of assessment to employ)
4. Diagnosis or ordering tests
5. Information seeking
6. Communication (including the communication of risks and benefits)
7. Treatment or intervention
   a. Targeting
   b. Timing
   c. Prevention

The level of agreement reached when the five-person research team were asked to code decision-related data according to this typology was 0.80 (Kappa score with a standard error of 0.02) by the end of the data collection period.

Whilst the possible combinations of patient (or clinical) information, resource information and clinical expertise are vast, the core uncertainties in primary care nurse decision making were finite and amenable to research derived knowledge.

Information seeking behaviour geared towards reducing uncertainty generally took place away from patient encounters; the exception being asking advice from colleagues and some drug reference materials. Information gathering in the patient encounter was usually confined to clinical (signs and symptoms) information gathering.

Most decisions described, and actions observed, were separated from the need to seek information to reduce

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clinical uncertainty. Nurses generally drew on their own internalised knowledge (often described as clinical experience) in response to decisions. Many nurses recognised that relying solely on experiential or internally recalled knowledge was not a sufficient condition for good decision making.

What nurses told us about the complexity – albeit perceived and self reported - of their decisions and the role of uncertainty means that without ways of making decisions 'simpler' simply targeting better quality (quality meaning clinical information fit for the purposes of reducing the 'core' uncertainty) information at nurses was unlikely to be a sufficient condition for better decision making.

Human sources of information (in the form of experienced colleagues and other members of the immediate primary care team) are consistently both the most accessible and useful sources of information in the context of routine clinical decision making. Whilst there were marginal differences in the perspectives identified, this was a 'core' element of the findings. Consulting text and online resources was not a routine response to clinical uncertainty. The exception to this was where the uncertainty related to a pharmacological query.

Barriers to the implementation of research included sources failing to bridge the skills and knowledge gap; the need for information formats and solutions to maximise limited opportunities for consumption; and for strategists to recognise that limited access in the context of limited time is a feature of clinical life.

Conclusions

The overwhelming focus on presenting information to nurses in the workplace that is a cornerstone of most research utilisation agendas should shift towards a more sophisticated knowledge management agenda. This agenda may mean recognising that teaching the universal skills of searching and appraisal of information for all nurses may not be the optimal way of ensuring that research evidence is given due weight at the point of decision making by nurses. Nurses can be viewed as a community of practice. The challenge for researchers and policy makers would appear to be understanding more about this community and developing means of managing knowledge which work with the prevailing attitudes, values and information behaviour rather than against them.?

Centre for Evidence Based Nursing, Department of Health Sciences, University of York, York, United Kingdom, YO10 5DD.
Contact e-mail: Cat4@york.ac.uk

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Interested in an Evidence-Based Librarianship Electronic Journal Club?

-submitted by Kristine Alpi, Continuing Education Chair

The Research Section is considering sponsoring an electronic journal club on the topic of Evidence-Based Librarianship. Participants who complete the club will earn 7.5 AHIP points by reading and discussing 6-12 articles. Recommendations for articles to be read are appreciated, even if you can't participate in the club. The club will begin in June and run through November 2004.

Anyone interested in participating or convening should contact Kristine Alpi at kalpi@att.net by May 15, 2004.

(CAQDAS — Continued from page 1)

easy to reanalyze if looking at new themes. However, software cannot replace conceptual thinking and users should avoid generating numerical reports using the software when counts are not the point of the analysis.[3] Studies can also combine computer and manual techniques in the analysis of both quantitative and qualitative data.[4]

CAQDAS programs

Software programs for qualitative data analysis reduce the clerical tasks of cut and paste for coding and retrieval in text. In managing qualitative data, programs facilitate extracting, retrieving, and tracking text segments as well as identifying commonalties or patterns in data. The process starts with a transcript of an interview or the content of an article in a plain text file that can be imported into the software program. Each study is a unit that consists of one of more document files. The researcher develops a code list of themes from which crosstabs or network diagrams can be generated.

The goal of this article is not to compare programs. There are several articles in the health sciences literature talking about the use of the NUD*IST family of software.[1,5,6,7,8] Barry compared NUD*IST and ATLAS.ti in 1998; although the programs have changed, some of the issues raised are still important.[9] Although there are more articles on NUD*IST, health professionals also use ATLAS.ti or other products. For example, the Medical Anthropologist at the New York City Dept of Health & Mental Hygiene uses ATLAS.ti to analyze transcripts from focus groups and interviews.

Commercial products include:

NUD*IST — QSR International
NUD*IST stands for Non-numerical Unstructured Data Indexing, Searching, and Theorizing. Current products in the NUD*IST family include **N6** and **NVivo**.
http://www.qsr.com.au/

ATLAS.ti — Scientific Software Development
http://www.atlasti.de/

The Ethnograph — Qualis Research Associates
http://www.qualisresearch.com/

Free products include:

AnSWR and **CDC EZ-Text** from the Centers for Disease Control & Prevention are profiled below. There are other freeware programs such as **VBPro** (http://mmmiller.com/vbpro/vbpro.html) for content analysis, but they have not been widely used in the health sciences.

AnSWR - Analysis for Word Based Records v6.0
http://www.cdc.gov/hiv/software/answr.htm

AnSWR is a software system for coordinating and conducting large-scale, team-based analysis projects that integrate qualitative and quantitative techniques. AnSWR includes tools for controlling access to the database and for assigning different levels of user rights to the research team.

CDC EZ-Text
http://www.cdc.gov/hiv/software/ez-text.htm

CDC EZ-Text is a program developed to create, manage, and analyze semi-structured qualitative databases. Investigators can create on-line codebooks, apply codes to specific response passages, develop case studies, conduct database searches to identify text passages that meet user-specified conditions, and export data in an array of formats for further analysis with other software programs.

Becoming Familiar with Qualitative Analysis Software

Even if not using CAQDAS for research, librarians who provide data services may benefit from awareness of these tools for manipulating qualitative data. Archiving and providing access to qualitative data is an important, but under-discussed area of librarianship.[10] Interoperability between programs by different vendors is an issue, though developers are taking steps to encourage sharing between packages such as adding export and import functions to their programs. Current strategies include archiving common dominator files such as text files. Processing sound, video and image-based publications currently requires transcription. Print documents may be scanned with optical character recognition and corrected to create text files. Programs that can process audio files directly into text for analysis are not yet commercially available.

Although developed for social scientists, qualitative software analysis packages are increasingly promoted to health sciences researchers. In 2001, for example, a demonstration copy of NUD*IST software was distributed with an issue of *Contemporary Nurse*.[11] There are many ways to learn how to use CAQDAS—online help, workshops offered by software providers, continuing education courses or experimenting. The U.K.-oriented site CAQDAS Networking Project (http://caqdas.soc.surrey.ac.uk/) offers a list of upcoming and past seminars. They also offer an online discussion list known as QUAL-SOFTWARE (http://caqdas.soc.surrey.ac.uk/quallist.htm). A special issue of Qualitative Research Journal (http://www.latrobe.edu.au/aqr/journal/special_AQR2003.pdf) focuses on learning and teaching qualitative analysis software.

The Medical Library Association Continuing Education Clearinghouse lists courses that address qualitative data analysis including *Qualitative Research Methods: Overview of Vocabulary, Methodology, and Process*, a course taught by Dr. P. Zoë Stavri, and *Qualitative Methods: The Right Stuff*, a cyber-seminar offered by Academy-

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Health. Some schools of library and information science offer research methods courses that include qualitative data analysis. The Association of Research Libraries 2004 Service Quality Evaluation Academy teaches the use of ATLAS.ti to analyze the content of interviews or responses to open-ended surveys. A book that may provide useful background on CAQDAS is Eben Weitzman's *Computer Programs for Qualitative Data Analysis: A Software Sourcebook* (Thousand Oaks, Calif.: Sage Publications, c1995). ?

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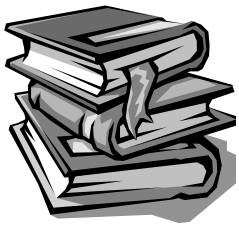
Acknowledgements: The author would like to thank Lara Tabac, a medical anthropologist with the New York City Department of Health & Mental Hygiene, for sharing information about her work with qualitative analysis software.

Congratulations New Section Leaders!

Molly Harris
South Texas Veterans Health Care System
Program Chair / Chair Elect

Cathy Burroughs
NN/LM Pacific Northwest Region & University of Washington
Section Candidate to the MLA Nominating Committee



Literature Review

—submitted by Ruth Fenske, Ph.D.

Peterson, Michael W. et al. Medical Students' Use of Information Resources: Is the Digital Age Dawning? Academic Medicine. 79(1):89-95, January 2004.

In spring 2001, 154 second year medical students at the University of Iowa were given access to UpToDate, an electronic medical textbook. In the previous three semesters students had been taught how to search for and evaluate clinical information. They had access to Harrison's Online and MDConsult. Each student was given a free paper subscription to NEJM. One component of the grade for case based learning exercises was the diversity of resources used. Later in the article we are told that medical students have "ample access" to computers in the wards and clinics and "variable access" to paper textbooks in those locations. The medical library is a short walk away.

Use of UpToDate was monitored; students were not aware use data were being collected. It appears that all students used the same user name, so use data could not be tied to specific individuals. By the end of the study period, ten months later, 1700 topics were searched per week. Assuming only the 154 students in the study were using UpToDate, this is over ten topics per student per week.

One hundred sixteen of the 154 students responded to a questionnaire administered at the end of their third year. Students were asked to consider their frequency of use, time spent, and how often they found an answer using paper books and journals, MEDLINE, Harrison's Online, UpToDate, MDConsult, and The Chochrane Library. Fifty-three percent used UpToDate most frequently; 33%, MDConsult; and 14% paper textbooks. They were also asked about their second and third most preferred source.

The authors conclude that availability and probability of successfully finding an answer did not influence the medical students' first choice of resource; time required to find an answer did have an influence. UpToDate and MDConsult were rated as having significantly greater overall usefulness than other resources. Students also foresaw continuing to use these resources in the future. The authors speculate that UpToDate, with its extensive use of hypertext, is faster to search than Harrison's. They do not comment on the ease of searching MDConsult.

These results seem logical, except for the conclusion that probability of successfully finding an answer did not influence their first choice of resource. Why would anyone spend time searching a source if they did not believe they would find an answer there? They cite previous studies of practicing clinicians which showed that "expectation that an answer could be found and the length of time it would take to find an answer were important in determining whether they pursued a question." They attempted to measure the expectation variable by asking the medical students the proportion of times they successfully found an answer in each source. The students reported finding answers to more than half their questions in all sources except MEDLINE. It seems to me the practicing clinicians were being asked if an answer even existed and, if it existed, their probability of finding the answer. This is not exactly what the medical students were asked in that the medical students were not asked to estimate in advance if they thought an answer existed. Rather, they were asked, after the fact, how often they were successful in finding answers in specific sources. It appears that the medical students assumed answers were available and that how long it would take to find the answer in each source was what determined their choice of source. It appears further thought needs to be given to the "probability of successfully finding an answer" variable when asked of medical students.

McLeod, Thomas G., Jon O. Ebbert, and James F. Lymp. Survey Assessment of Personal Digital Assistant Use among Trainees and Attending Physicians. Journal of the American Medical Informatics Association. 10(6):605-607, November/December 2003.

Fifty-five percent (473) of 867 Mayo Clinic internal medicine attendings, residents, and fellows responded to an 11-item survey of PDA use. Two hundred eighteen (46%) of the respondents reported current use of a PDA. Residents and fellows were more likely to use PDAs for direct patient care and attendings for administrative uses. Attendings used the calendar and scheduling applications more frequently and residents and fellows used drug information programs, medical references, and medical calculators more. The authors speculate that differences in the work of house staff and attendings and differences in their experience and knowledge may account for the differences between the two groups. It would be interesting to know more about why the attendings did not use the clinical resources very much. Did they truly not have occasion to use clinical information, did they already know the information, did they consult other resources, or did they not know how to use the clinical resources offered on the PDA? Six hundred forty-nine physicians either did not currently use a PDA or did not respond to the survey. It would be interesting to know why attendings, residents, and fellows are not using PDAs. What could librarians do to promote use of clinical resources available on PDAs in their institution?

Ackerson, Linda G. and Karen Chapman. Identifying the Roles of Multidisciplinary Journals in Scientific Research. College & Research Libraries. 64(6):468-478, November 2003.

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The purpose of this study was "to determine the role of multidisciplinary journals in scientific research." Based on high impact factors, the authors chose *Nature*, *Science*, and the *Proceedings of the National Academy of Sciences* (PNAS) for inclusion in the study. A stratified random sample of 1997 articles, based on numbers and types of articles, formed the basis of the study. The sample size was 183 articles. A random sample of ten percent of the 7551 articles which cited the 183 sample articles, in 2000, was also analyzed. The discipline and subdiscipline for each article and citing article was determined. The life sciences were broken down into biological sciences and biomedical sciences at the discipline level. For the 96 citing articles for which the cited paper was from a different discipline, reason for citation was determined by looking to see in which section of the paper the citation occurred. For instance, it was assumed that a citation in the literature review implies that the cited and citing articles are on similar topics.

Although these journals are characterized as being multidisciplinary, most individual articles are not multidisciplinary. Hence, these journals are multidisciplinary in that they publish articles from several different disciplines. *Science* was most likely to publish research in progress articles and PNAS specializes in completed research articles and reviews. *Nature* and *Science* both publish almost as many letters to the editor and opinion articles as completed research articles.

Forty-four percent of the articles in the sample were life sciences articles. Looking just at the life sciences, biological sciences articles in *Nature* tended to be cited by authors in the same discipline but biomedical articles in *Nature* were much more likely to be used by authors in another discipline. I believe, in this case, "discipline" refers to the broad disciplines of biomedical sciences, biological sciences, social sciences, etc. For PNAS, biological sciences articles tended to be used by other biological scientists and biomedical articles were used by both biological scientists and those in other disciplines. Biological sciences articles in *Science* were widely used by other disciplines and biomedical sciences were used mostly by other biomedical scientists. Unfortunately the data do not show which other disciplines used journals in each discipline. One could assume that much of the cross-citation was between the biological and biomedical sciences, and the authors do, in fact, say this in their conclusion.

In the 96 cases of cross-citation, *Nature*, PNAS, and *Science* articles were most frequently cited in the introduction, literature review, and discussion sections of the citing articles. The authors conclude that this "infers a transfer of ideas across disciplines."

Although this article appears to be competently done, the reader interested in the life sciences is left asking questions at a greater depth than these data show.

Lee, Hur-Li. Library & Information Science Research. Information Spaces and Collections: Implications for Organizations. 25(4):419-436, 2003.

Five natural scientists and five social scientists were selected to participate in a study of the academic information environment. Each subject was interviewed for approximately an hour and tapes of the interviews were analyzed.

Academics seek information for both teaching and research. Although some participants thought there was a difference between the two types of information seeking, there really was not. Academics sometimes looked for specific information or documents, at other times they explored purposefully for information on specific subjects, and at other times they merely scanned, not looking for any specific information.

Looking for specific information and documents was regarded as being straightforward. The Internet was widely used when looking for information and the library's catalog when looking for a specific document. Immediate access was preferred.

Subject exploration was considered to be problematic and time-consuming. Participants used abstracting and indexing tools, the OPAC, and the web. Online databases available in the office were preferred, even when a better paper index was available in the library. Here again users wanted instant access to the tools and preferred to search themselves, rather than going through an intermediary. They also browsed the stacks in the library and consulted personal collections and human sources.

Scanning or current awareness was a less urgent situation. For the most part they used personal subscriptions, subscriptions to table of contents routing, electronic journals, and favorite web sites, rather than going to the library.

The author talks about the three main "spaces" in which information seeking takes place: immediate, adjacent, and outside. The immediate space was the person's office where there was a collection of print books and journals, photocopies of articles, and a computer on which they accessed library resources and the Internet. Favorite web sites were bookmarked. Using resources in the office provided immediate access to a wide variety of resources. Adjacent space was the university library. Again, they expected that all needed documents, not available electronically, would be readily available in the library. The library was also useful for browsing. Most preferred not to go to the library. Outside space is local libraries, local bookstores, and ILL. Of the three, ILL was the most used.

Although the introduction is filled with confusing jargon, this study graphically shows under what conditions, in

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Build your Knowledge of Research and Publication Strategies at MLA 2004

-submitted by Kris Alpi, Continuing Education Chair

The MLA 2004 Annual Meeting offers an array of courses on research and evidence-based practice. Three courses are profiled below, but see the entire list of courses at http://www.mlanet.org/am/am2004/ce/index.html. If there is a course that you would like to see offered at MLA 2005, please let me know.

Note that all three of these courses are scheduled for Saturday, May 22, 2004.

263 Writing and Editing for Peer-Reviewed Library Journals
Six-Hour Course: 8:00 A.M.–3:00 P.M.
Level: Beginning
Cost: $235 (nonmember, $285)
Attendance Maximum: 30

Learn how to organize your ideas, select resources, and get over writer's block. You will walk away with an understanding of the publication process, the ethical issues involved with authorship and duplicate publishing, and ways to negotiate effectively with editors and reviewers.

Instructor: David L. Armbruster, Ph. D., head, Scientific Publications and Library Communications, Health Sciences Library, University of Tennessee-Memphis

742 Measuring the Difference: Strategies for Planning and Evaluating Health Information Outreach Programs
Full-Day Course: 8:00 A.M.–5:00 P.M.
Level: Beginning+
Cost: $260 (nonmember, $310)
Attendance Maximum: 25

Examine theories and best practices for maximizing and measuring success in outreach programs. Learn methods to improve outreach and assess its impact. Cover the key concepts and phases of program planning and evaluation, including needs assessments, goals and objectives, strategies and activities planning, and outcomes measurement. Understand the theories in outreach strategy development and evaluation and the process for developing and conducting various types of evaluation.

Instructors: Catherine Burroughs [Research section member], Assistant Director, NN/LM Outreach Evaluation Resource Center, and Maryanne Blake, coordinator, Education and Communication, NN/LM PNR, University of Washington–Seattle

750 Focus Group Interviewing: A Qualitative Research Methodology for the Library
Full-Day Course: 8:00 A.M.–5:00 P.M.
Level: Beginning
Cost: $260 (nonmember, $310)
Attendance Maximum: 20

Focus group interviewing is a qualitative technique which gathers information about the opinions, knowledge, perceptions and concerns of small groups of individuals on a particular topic. All sorts of service organizations have used the technique to evaluate their programs and services by gaining a better understanding of what their users think. Health sciences libraries will find this a useful method to gain insight into the needs and expectations of their patrons and into their own success or failure in meeting those needs. This course will explain the difference between qualitative and quantitative research and examine the focus group interview methodology. Applications of focus group interviewing specific to the health sciences library environment will be discussed.

Instructors: Claire Hamasu, associate director, Eccles Health Sciences Library, NN/LM-MCR, Salt Lake City, Utah, and Beryl Glitz, consultant, Sebastopol, CA

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the electronic age, academics will seek information in their offices and when they will go to the library. These users also lacked confidence in the ability of their librarians to help them. They seemed to be unaware that the library was the source of the electronic resources to which they had access. This causes one to ask if libraries and librarians are being marginalized. Are there ways for us to insert ourselves into the immediate space by e-mail, telephone, and going to offices?

It would be interesting to conduct similar interviews with physicians who do a significant amount of work in the clinic, in the operating room, in the lab, and in offices at home and at work. Are health professionals possibly more dependent on librarians in comparison to other academics, because of the different pace at which the two groups work?

Nurses are very confined to the floor during all their work hours. It would be interesting to know if nurses are able to and are actually taking advantage of the electronic resources now available in their immediate space. ?

MLA '04
Seize the Power
Washington, DC
May 21-26, 2004
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*Research Section*
*Sponsored Presentations*

## Sunday, May 23rd 2:00—3:30 pm

**Sponsor**: Research. Co-Sponsors: Assessment and Benchmarking SIG, and Clinical Librarians and Evidence-based Health Care SIG

**Title**: *The Power of Evidence (Part 1): How Benchmarking Can Make Your Point*

**Format**: Contributed and Invited papers

**Description**: Usage statistics and benchmarking with other libraries can provide the evidence you need to remain viable and prove your worth at the institutional, regional, and national levels.

## Monday, May 24th 3:30—5:00 pm

**Sponsor**: Research Section. Co-Sponsors: Assessment and Benchmarking SIG, and Clinical Librarians and Evidence-based Health Care SIG

**Title**: *The Power of Evidence (Part 2): Discovering Our Effectiveness with Outcomes*

**Format**: Contributed and Invited papers

**Description**: Institutional planners and accrediting bodies are focusing on outcome assessment. Libraries increasingly need to measure their outcomes related to the mission of the institution, or they may need to address the more specific outcomes of agencies such as Association of American Medical Colleges, Accreditation Council for Graduate Medical Education, and Joint Commission on Accreditation of Healthcare Organizations. Along with these new outcomes, user satisfaction and service quality must remain in the forefront of what libraries must accomplish. An invited speaker will discuss the development of outcome standards, and contributed papers will address how libraries have measured and used outcomes effectively.

## Tuesday, May 25th 2:30—4:00 pm

**Sponsor:** Research Section

**Title**: *Evidence-Based Librarianship: Step-by-Step From Those Who Have Done It*

**Format**: Invited Papers

**Description**: Are you afraid to tackle a research project? Learn from others how to conduct a systematic review, a qualitative study, or a randomized controlled trial. Successful projects will be described by those who have conducted research projects.

**Speakers:** Gary D. Byrd, AHIP, Health Sciences Library, State University of New York-Buffalo; Jon Eldredge, AHIP, Health Sciences Center Library, University of New Mexico-Albuquerque; Sherrilynne S. Fuller, FMLA, Health Sciences Libraries, University of Washington-Seattle; Frank O. Mason, Wilson Dental Library, University of Southern California-Los Angeles; Michelynn McKnight, AHIP, Health Sciences Library, Norman Regional Hospital, Norman, OK; and James Shedlock, AHIP, Galter Health Sciences Library, Northwestern University, Chicago, IL
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