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Literature review
EDG6905 : “Use of educational technology to promote library use”
June 20, 2007
Professor Jeff Hurt
**Problem:** From my survey, I have found that over 70% of geography-related researchers surveyed at an institution of higher learning (University of Florida) relied more on the Internet and other sources compared to using the physical library (~25%) to research and retrieve materials of a cartographic nature. Independent of across the board recent trends or what other subject or branch experiences may be, the numbers seem to reflect a higher dependence on the non-physical library resources than on the actual physical buildings where professional help is readily available. I will be looking at literature available that discusses and attempts to provide ideas and answers that can help increase the numbers for in-library use.

There need to be proposals and projects to evaluate, promote and increase the use of the library in general, to promote the benefits of using professional reference librarians and to make users aware of the “limitless” availability of research materials accessible to them. Librarians and library paraprofessionals, like teachers must see how technology can support standards, facilitate library use and make learning interesting for students and researchers. Technology must enhance lessons taught in order for the use of the lessons to be effective. This is the idea behind the following bibliographic list outlining relevant sources mostly applying pedagogy, educational technology and other methods to increase patron library use.

Through the readings I was able to identify 7 themes or approaches that kept getting brought up as methods to encourage library patrons to visit, participate and use the library with more frequency:

1. (LBI) Improved library/bibliographic instruction  
2. (SEB) Surveys/evaluations and user behavior observations  
3. (PAM) Improving virtual access to materials  
4. (OBC) Fixing/improving/organizing/simplifying/enhancing (adjusting) bibliographic content or classification of materials  
5. (THF) Using non-library, geographic technologies -- Need for human factor  
6. (PLP) Promoting (information) literacy -- Promoting policies encouraging use  
7. (IPD) Reviewing/improving physical barriers/design

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**Bibliography format outline:**

- **Theme abbreviation** (i.e., *(OBC)*) -- and tagline in italics;  
- **Reference citation in bold**  
- Abstract or other introductory or summary information in normal font (just below citation)  
- Separate commentary/literature review in red
Methodology: sources were mostly academic journal articles from the educational technology and library science professions. Most of the articles are within the last 15 years or so with a few exceptions. Among the search terms in play: users (user-friendly, user studies), library use, educational technology, libraries, patrons, library instruction, information literacy, promotion, increase, among others.

Review of the literature—

(LBI) -- Taking into account the increased use of digital information and decrease of physical collections and what the role of the library in providing library instruction and promoting use is in this new age of technology

Integrating Library Instruction into Student Education (Savenije), From: Education Libraries Journal, v. 42, no.1, (pp.5-10)
Intro: “The present article is by no means a technical account regarding the formulation of library instructions. In this article we rather go into the phenomenon of library instruction within the context of student education. The views expressed here concern my personal observations regarding the library. More specifically, they regard the library’s future as well as university education and its future in general.”

Library instruction may be indispensable, but this article discusses if the future library instructor will be teacher rather than a librarian. It suggests that the library’s main role is to remove all obstacles in the way for users to access information. There is emphasis on the library being a navigator for the user to find his way to user-friendly tools.

(SEB) -- Encouraging freshmen’s use of the library and especially electronic resources and self-efficacy as a way to promote library use

Abstract: To encourage students' use of the library, and in particular of its electronic resources, we need to understand what factors encourage students to seek out information in the library setting. Research has shown that self-efficacy influences academic achievement. This paper looks at the role self-efficacy plays in their search for information and use of the library's electronic resources, by surveying a class of freshmen at Baruch College. Their library and computer use were analyzed and correlated with their self-efficacy scores. Through statistical analysis, we found that use of the library correlated to the students' use of the library's electronic resources. We also found out that students who express an interest in learning about the library's electronic resources will be more likely to have higher self-efficacy.

This article looks at factors that play a role in deciding to use the library and its resources for information seekers, especially that more and more are using the Internet to find information. The paper does a good job of pointing out the need to do further research to determine how students’ use of the library can help in gaining the awareness to use its resources.

(SEB/THF) -- Evaluating different geographic-based information retrieval systems

Challenges and Resources for Evaluating Geographical IR (Martins); Internet: http://xldb.fc.ul.pt/data/Publications_attach/grease-evaluation.pdf

“There is an increasing interest over information retrieval tools that access resources on the basis of geographic context ...the subject of Geo-IR is still at an early stage of development, and limited evaluation
has so far been performed on such systems. Advances in the area require an evaluation methodology, in order to measure and compare different techniques ... a complete Geo-IR system involves different components, which interdependently influence one another and could benefit from a separate evaluation. The objective of this paper is to highlight the feasibility of a scientifically sound approach for evaluating the different components of a Geo-IR system, whenever possible building on standardized benchmarks, and separating the tasks associated with the challenges outlined above. We present existing resources for evaluating the different components, together with a review on previous experiments.”—(p. [1])

The idea behind pointing out the different information retrieval systems is to bring an awareness of how librarians, especially Map, GIS and reference librarians can better serve the public by promoting what users can do by enhancing their research capabilities.

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(THF) -- Promoting library use through digitization and geo-referenced books (promoting geospatial access of materials)


“The Alexandria Digital Library Project has the unique advantage of developing georeferenced digital libraries holding both textual and geospatial resources and providing services that provide geospatial description and access for all resources.”(p.[1])

“There are two fundamental types of georeferencing: by placenames and by geospatial coordinates … Placenames are used in discourse and text, subject headings and index terms, labels on maps, and to identify administrative districts for addresses, statistics, and data. …coordinates are used to represent the location of features on the surface of the Earth and the coverage of maps, aerial photographs, remote-sensing images, and datasets of various kinds. … the predominate use of placename or coordinate place referencing has been associated with domains of information resources that have been treated by separate information management systems: text-based systems on the one hand and GIS on the other.” (p. [2]).

There is a need for a shifting of educational requirements for the professional librarian if there is any hope to keep up with the technology needed for them to promote library use. We need to incorporate coordinate representation into metadata for all types of information objects and develop gazetteer services to translate placenames in subject headings and coordinates to aid library cataloging to facilitate information retrieval services.

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(PAM) -- Promoting the use (increase user acceptance) of the libraries by way of building up the digital collections


“… digital libraries are electronic collections that are much richer in content and more capable in functionality than databases or information retrieval systems, and are increasingly accessible over the Internet. The major advantages of digital libraries include storing resources in an easy-to-track digital format … There have been significant advances in the technical development of digital libraries in areas such as information storage, information retrieval, and system integration, resulting in dramatic improvements in their performance. While many resources have been devoted to developing these systems, library researchers have observed that digital libraries remain underutilized. If these systems are not used widely, then it will be difficult to defend their considerable investments and the potential benefits they offer will not accrue to users. Hence, there is a necessity to identify factors that can increase user acceptance of digital libraries.” (p.78)
This work offers recommendations for increasing user acceptance of digital libraries, identifying important predictors of increased usability of digital libraries including such ideas as terminology clarity, screen design, and navigation clarity and organizational context.

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(THF) -- Digital libraries helping professors teach geography in the classroom


“A goal of the Alexandria Digital Earth Prototype project is to make primary resources in geography useful for undergraduate instruction in ways that will promote inquiry learning. The ADEPT education and evaluation team interviewed professors about their use of geography information as they prepare for class lectures, as compared to their research activities. We found that professors desired the ability to search by concept (erosion, continental drift, etc.) as well as geographic location, and that personal research collections were an important source of instructional materials. Resources in geo-spatial digital libraries are typically described by location, but are rarely described by concept or educational application. This paper presents implications for the design of an educational digital library from our observations of the lecture preparation process … The functional requirements include definitions and enhancements of searching capabilities, the ability to contribute and to share personal collections of resources, and the capability to manipulate data and images. … One aim of digital libraries is to support information seeking, creation, and use to support instruction, from elementary through graduate school. Digital libraries hold great potential for educational applications, as they can provide access to a wide array of information resources that are essential for inquiry. … Although students are accustomed to this approach, most do not form a deep conceptual understanding of science or its methods. More recent science learning standards promote inquiry teaching as a means to help students develop deeper conceptual understanding of science. When students learn science through inquiry they are imitating practicing scientists. Inquiry learning approaches that bring scientific or scholarly experiences to the classroom are central to integrating teaching and research at the undergraduate level.” (p. 179).

This work deals with using educational digital libraries to help science teaching; integrating the use of the digital library and introducing the concept of spatial reference to enhance teaching.

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(THF) -- Mobile Geography Education

Location based services and telecartography (Gartner, et al. ed.) [Chapter from: MoGeo : a location-based educational service (Bennett, et al., ) (pp 493-509) , 2007 ] [BOOK]

“The classroom is an efficient venue for conveying theories and concepts in many disciplines. In geography … students often have difficulty understanding spatio-temporal processes that are represented abstractly.”

The chapter deals with using GPS receivers, GIS software, wireless networks, PDA’s as a method (Mobile Geographic Education) to learn about geography. Although, not directly promoting the use of the library, this is pointed out as a way for librarians to take note of how to keep up with technology to keep pace with the challenges of the geoscience students.

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(OBC) -- Shifting relevance from standard criteria to user-defined

User-Defined relevance criteria: An exploratory study (Barry) from Journal of the American Society for information Science -April 1994. (pp 149-159)
Intro: “The focus throughout the following discussion is on information retrieval systems that provide users with references to printed, textual materials … the focus is on the user who can present a request for unknown or unfamiliar information, and purposively approaches the system … in an attempt to discover such information.”

Relevance: “This research identified and described relevance criteria mentioned by users within an academic environment who were examining printed textual materials. Again, this research was exploratory and descriptive, and was intended to provide an incremental step toward better understanding of the relevance judgment process. Perhaps the greatest research need is for similar research into the information behavior of other user populations, examining different types of information for different purposes.” (p.158)

This article brings to light a new way for librarians, especially cataloger and possibly reference librarians to approach retrieving materials in a different way than the “old” standards of the subject access for research materials and look into what the research is trying to find by way of their perspective. This being maybe a motivating factor for increase use of the libraries.

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(OBC) -- A way to make the library look like an integral part of pedagogy by way of utilizing their useful classification scheme to organize things spatially while using physical geography to get that point across

How can classificatory structures be useful to improve science education? (Buchel and Coleman) from: Library Resources & Technical Services, v.47, no.1 Jan. 2003. (pp. 4-15)

“… classification schemes and thesauruses are not often thought of or used as pedagogical systems. Also known as classificatory structures or knowledge organization schemes, they are used to organize knowledge for retrieval in libraries. Along with other information systems in the library, the online public access catalog and bibliographic databases, these tools have generally been designed to meet the information needs of the user who is a researcher or professional librarian, not the novice learner. Trends in interdisciplinary study and research, the widespread availability of electronic information resources, and the interest of funding agencies in the development of educational digital libraries provide an incentive to investigate how one type of classificatory structure, the faceted thesaurus, can facilitate science teaching and learning.” (p.4)

Scientific classifications are different from library subject classifications. Library classifications link subjects to subtopics, etc., while scientific classifications (as in geography have their own criteria to separate concepts within their realm probably fitting into hierarchical thesauri. But relationships can be defined by broad, linear or narrow terms as used in the Library of Congress Subject headings for instance. So a relationship can be structured to help facilitate the different discipline needing help finding materials.

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(PLP) -- Making use of the No Child Left Behind Act to promote literacy and libraries

“No geographer child left behind”: An educator’s guide to Geography Education and the No Child Left Behind Act of 2001 (Daley), 1993 from the Internet


“Student Reading Skills Improvement Grants are designed to emphasize the importance of reading in academic achievement and to ensure that all students achieve grade-level reading ability by the third grade. Local Education Agencies receiving funds under the Reading First Program are required to create and maintain programs, professional development, and materials that allow student access to engaging reading materials. Improving Literacy Through School Libraries allows for the expansion and improvement of school libraries and media centers by providing access to up-to-date school library materials, well-equipped media centers, and well-trained and certified library media specialists.” (p. 6)

Opportunities for exposing and promoting libraries are introduced in this article by way of geography teachers. The programs provide the opportunity to develop reading materials related to geography. For example, National Geographic produces educational reading materials and can fund programs that use
geography reading materials to help prepare students for mandated state literacy exams. Local agencies can enter into partnerships with universities, other organizations, or libraries. This promotion aspect early on can help future library use.

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(OBC) -- The comparisons of Scholar Google and library databases for analyzing the promotion of library use and helping reference research

Google Scholar coverage of a multidisciplinary field (Walters) from: Information Processing and Management, v.43, 2007 (pp.1121–1132)

Abstract: "This paper evaluates the content of Google Scholar and other [library] databases …within the multidisciplinary subject area of later-life migration. Each database is evaluated with reference to a set of 155 core articles selected in advance—the most important studies of later-life migration published from 1990 to 2000. Of the eight databases, Google Scholar indexes the greatest number of core articles (93%) and provides the most uniform publisher and date coverage. It covers 27% more core articles than the second-ranked database and 2.4 times as many as the lowest-ranked database. At the same time, a substantial proportion of the citations provided by Google Scholar are incomplete (32%) or presented without abstracts (33%)."

The use of Google Scholar among libraries will depend on the needs of the institution or individual programs (as well, as the reputation of the library corps). Librarians must consider how Google Scholar fits into its mission. Is Google scholar for replacing databases lost to subscription increases or to supplement existing databases? How do searching skills play a role in research and reference work? I want to see how promoting an internet source can help librarians increase library use.

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(SEB) -- Getting a handle of users’ perceptions of library service quality

Users’ perceptions of library service quality: a LibQUAL+ qualitative study (Cook & Heath) from Library Trends, vol. 49, no. 4, Spring 2001, (pp. 548-584)

Excerpt: "It becomes less important as you go up the higher education ladder" was the general assessment … One observer offered a perceptive explanation for this dynamic, contrasting the library experience with the classroom. "Once you've broken the ice in the classroom," he suggested, "that's everybody's turf.... I don't walk into a class thinking 'this is my classroom.'... I have a role to play and I hope the students feel the same. You are on foreign turf when you go [into the library].... There are some demeanor issues that are important, that librarians should understand as faculty intuitively do" For impressionable undergraduates, disconfirming acts can be especially problematic and can have an impact on perceptions of service quality far out of proportion to the frequency of their occurrence. One associate professor, generally favorably disposed to the level of library service at his university, offered one example of the ripple effect of a negative encounter. The incident involved a keyword search he recommended a student make on a certain database. Unfortunately, he recalled, the librarian on duty was unfamiliar with the database, questioned the search and whether the instructor "was at all up on what I was talking about."

This comparison of students bringing up school instruction to point out the kinds of things they encounter at the library brings up the factor that librarians are not just losing users because of technology but because of service quality issues.

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(LBI) -- Developing bibliographic instruction to help the library user

Using critical thinking as a basis for library user education (Atton) from: Journal of Academic Librarianship, Nov94, v. 20, issue 5/6, (pp. 310-313)
“The article focuses on the critical examination of information in rewriting an undergraduate course of bibliographic instruction. By learning to ask questions, by learning from each other, by thinking critically and by taking responsibility for their own learning, students become effective and confident information users.”

This article centers on critical thinking but more importantly for my work, I think that the idea of approaching bibliographic instruction by way of focusing on problem-solving and less on the techniques of information retrieval, researchers will develop the tools gain the knowledge of information sources through the course that is more concerned with skills, relevant to their areas of study.

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(LBI/SEB) -- Librarians gauging the information literacy of undergraduates to improve their skills to do their course work.

Assessing the Information Literacy of Undergraduates: Reports from the UCLA Library’s Information Competencies Survey Project (Caravello) from ACRL Tenth National Conference, March 15–18, 2001, (pp. 193-202)
Intro: “Librarians have long had anecdotal evidence that undergraduates do not possess adequate information skills for some of the course work they are required to do, let alone for lifelong learning. At UCLA, with a vigorous but decentralized approach to library instruction, it has been hard to see the way clear to establishing or implementing basic information literacy goals for undergraduates. Convinced that hard data would help move this forward, and hoping to gain a better understanding of information competence at UCLA, the Instructional Services Advisory Committee embarked on an assessment project supported by the library administration.

This work recommends testing freshmen to help identify weaknesses in their searching abilities and how they can be addressed through library instruction. Also presents the idea of testing them at subject level for adjustments, seeking the cooperation of faculty while determining what methods and techniques will help the students.

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(LBI/SEB) -- Assessing student library use to determine how to improve library instruction to help student learning and simultaneously improve library accreditation.

The role of assessment in library user education (Knight), from Reference Service Review, v. 30, no. 1, 2002, (pp. 15-24)
Abstract: “In response to a growing need for the library to articulate the success of its efforts in terms of student learning outcomes, librarians at the University of the Pacific Library developed a plan to assess library instruction…This paper describes the process and presents the results of a case study of assessment of library instruction for first-year students.”

Libraries must retain their role in the universities’ academic mission and become a more active participator in its role. Current trends in assessment are relying more on a student-centered approach. The challenge remains how to measure the effectiveness of libraries as an academic hub for student learning. Again, faculty is sought to help with assessment of needs, and monitoring will continue to be part of the instruction activities.

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(PLP/OBC) -- The availability of information literacy to help promote information retrieval

An Analysis of information literacy education worldwide (Moore), White Paper prepared for UNESCO, the U.S. National Commission on Libraries and Information Science, and the National Forum on Information Literacy, for use at the Information Literacy Meeting of Experts, Prague, The
From intro.: “In this environment, educators ‘win’ in that access to vast amounts of information is possible directly from library facilities and through use of ICT in schools. However they ‘lose’ in that this puts considerable pressure on their own knowledge of technology and information processes and their ability to develop the information skills of students. For instance, there are challenges in defining and quickly locating relevant and objective material, and the authority of digital information is often more difficult to establish than is that of printed literature. While adults may have accumulated experiential knowledge to assist them in sifting and evaluating information, frequently children consider something in print or from the Internet must be true. Furthermore, the information retrieved typically reflects only the language, culture and lifestyle of its creators. This makes evaluation of worth and applicability in other cultures particularly challenging for adults and children alike.

This paper attempts to show how library programs can affect the value of information literacy. It identifies practices for teaching information literacy through a wealth of resources and teacher-librarians, dissemination of practical knowledge, and that information literacy reflect the university’s curricula.

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(PLP) -- Engaging the community to shape policy to promote library use by way of the development of a digital library


“Science educators have called repeatedly for an information system that can effectively deliver quality educational materials in readily accessible formats, with a high degree of confidence in their usefulness, interest, and effectiveness [4]. In the past 18 months, the Earth system education community has begun development of the Digital Library for Earth System Education.” P.80

This digital library is conducting a social experiment, using the encouragement of the community it serves to participate in the design of policy to promoting library. Including community participation allows for shaping the conditions of library use.

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(SEB/PAM) – Promoting library use by reuse of educational resources by way of the development of a digital library

Looking at digital library usability from a reuse perspective (Sumner and Dawe), from: Joint Conference of Digital Libraries, June 24-28, 2001, (pp. 416-425)

Abstract: The need for information systems to support the dissemination and reuse of educational resources has sparked a number of large scale digital library efforts. This article describes usability findings from one such project – the Digital Library for Earth System Education (DLESE) – focusing on its role in the process of educational resource reuse. Drawing upon a reuse model developed in the domain of software engineering, the reuse cycle is broken down into five stages: formulation of a reuse intention, location, comprehension, modification, and sharing. Using this model to analyze user studies in the DLESE project, several implications for library system design and library outreach activities are highlighted. One finding is that resource reuse occurs at different stages in the educational design process, and each stage imposes different and possibly conflicting requirements on digital library design...

This is a look how libraries can provide information systems that can effectively deliver quality educational materials that are readily accessible and useful. Digital libraries have been called on to take care of this. It is the assumption here that digital libraries are the panacea to improve student learning and faculty productivity, yet there is a call for more research to see how what the digital libraries are providing is improving things.
(SEB) -- Finding a relationship between students’ background and their use of the library

The Relationship between undergraduates’ background characteristics and college experiences and their academic library use (Whitmire) from College and Research Libraries, 2001, (pp 528-540)

Source: “This study examines factors that influence undergraduates’ academic library use during the first three years of college. Undergraduates’ high school library use, student-faculty interactions, and active learning and engaged writing activities predicted library use for all three years of the study. There was an interesting relationship between undergraduate library use and self-reported and objective critical thinking scores. These findings are useful for the redesign of current academic library services and future research studies on information-seeking behavior.

This article is attempting to figure out how to provide adequate resources and design effective services for undergraduate students. The approach here is to see what from their backgrounds has had an influence in their use of the library. The following factors are considered: demographics, academic test scores, grades, previous library skills or instruction, previous library activities. It was determined by the study that students only used the library occasionally and that additional research is needed to determine how to increase student activities at the library (duh!).

(PAM/OBC) -- Looking at the possibility that too much information overwhelms library searchers

What to do when there’s too much information (Lesk), from: Hypertext ’89 Proceedings. (pp. 305-380)

Intro: “Hypertext systems with small units of text are likely to drown the user with information, in the same way that online catalogs or bibliographic retrieval systems often do. Experiments with a catalog of 800,000 book citations have shown two useful ways of dealing with the “too many hits” problem. One is a display of phrases containing the excessively frequent words; another is a display of titles by hierarchical category. The same techniques should apply to other text-based retrieval systems. In general, interactive solutions seem more promising than attempts to do detailed query analysis and get things right the first time.”

As larger quantities of materials are entered into library databases, users are overwhelmed with information. Increasing the total number of items makes it more difficult to find materials. As hypertext increases the resolution of searching by storing many items, it increases the complexity of searching by adding more items. Traditional libraries solve these kinds of problems by grouping them together and electronically a similar way is needed to organize this increasing amount of information. Highlighting frequent words and phrases and grouping related subject topics can be effective in helping retrieve what the user needs.

(Obc) -- The use of educational metadata to include subject area information to help retrieval of materials

Primary multimedia objects and 'Educational Metadata': A fundamental dilemma for developers of multimedia archives (Shabajee) from: D-Lib Magazine, v.8, no. 6 June 2002

http://dlib.org/dlib/june02/shabajee/06shabajee.html

Abstract: “Large multimedia database systems have great potential for educational use. Their assets can often be used to support educational and research activities in a wide variety of educational contexts, supporting learners and educators from many subject areas. This article focuses on what appears to be a fundamental dilemma for the developers of such systems regarding how to tag or index their assets with metadata so as to support discovery of the assets by these educational users… This article explores in detail the causes of this dilemma and introduces three complementary approaches to resolving the situation.”

There is an ideal approach to this article trying to find a balance that serves a diverse range of users while making the indexing and management of the database retrievable. It discusses that the aim should be to
serve the users by using them to help develop an informed decision making process that strikes a balance between comprehensibility and metadata standards.

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(PAM/LBI) -- Educating library users on how to use digital library to help retrieve materials


Intro: “This article builds on work in the past few years, triggered by Ticer course and consulting activities, notably for the Dutch Open University and the Amsterdam University for Professional Education. It attempts to identify strategic issues for libraries wishing to pursue a more active policy with regard to the changes affecting higher education due to the increased use of information and communication technologies. The article starts out by sketching the changes currently occurring in education. … The following domains are discussed: digital libraries and digital learning environments; digital portfolios; information literacy; collaborative course design; and the relation between physical and virtual learning environments. Next, possible implications for library staff regarding the changes are discussed. The article concludes with thoughts on alignment between library strategy and the strategy of the library's parent institution.

This article looks at end-user challenges, pointing to how teaching staff can best be supported when designing digital learning environments and enriching them with digital libraries. The focus is on the teachers and their courses to do a tailor-made approach and can be viewed as analogous to reference librarians putting together reserve collections to support courses.

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(SEB/OBC) -- A novel idea of adults asking middle-grade students to reflect on their learning to help their information retrieval

“If you don’t have it, you can’t find it”: A close look at students’ perceptions of using technology (Watson), From: Journal of the American Society for Information Science, v. 49, no. 11, (pp.1024–1036), 1998

The study, therefore, provides qualitative data for others to read first-person voices from the schools, and one professional’s response. Such a study may offer practitioners insight for listening to the users of the new technologies, for the “major purpose of library research must be focused on the question of how libraries can intervene usefully in individual sense-making processes”. Educators and policy makers may need to add student voices as an important element in thinking about users of this and other technologies. As recipients, users, and leaders in using electronic resources for learning, students’ ways of being with technology may inspire us to think in fresh ways.” (p.1024)

This takes a look at students’ perceptions and how their understanding of information services can create problems that adults need to be looking at to serve them. A look at how adults can work with student users’ search constructs; also, look at students’ levels of self-confidence using resource tools and to develop strategies. The study raises questions for professionals to help students how to seek and retrieve information.

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(PLP) -- Enhancing information literacy by reducing anxiety


Abstract: “This paper reviews the major publications by Qun G. Jiao and Anthony J. Onwuegbuzie that chronicles the development of empirical research conducted on the construct of library anxiety among
college students in the United States during the past decade. It also examines the sizeable contribution that these two researchers have made to the body of knowledge of this emerging field of study in library and information science. The paper concludes by encouraging more researchers to continue the work of Jiao and Onwuegbuzie by examining further this widespread and pervasive phenomenon."

Enhancing information literacy among students by understanding what types of instructional programs are most likely to produce information literate searchers is important to librarians. This works emphasizes on the more psychological and emotional barriers for effective library use, introducing the term “library anxiety.”

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(PAM) -- Library Web sites are not the total answer to solving user problems with the library

Usability of the Academic Library Web Site: Implications for Design (McGillis and Toms), from: College & Research Libraries, July 2001 (pp. 355-367)
Abstract: “Today’s savvy library users are starting to equate the library Web site with the physical library. As they accomplish, virtually, many personal activities such as online shopping, banking, and news reading, they transfer those experiences to other activities in their lives. This increases their expectations about the functionality of a library Web site and how one interacts with it. The purpose of this study was twofold: to assess the usability of an academic library Web site and to better understand how faculty and students complete typical tasks using one. Thirty-three typical users successfully completed 75 percent of a set of typical tasks in about two minutes per task and were satisfied with the clarity and organization of the site. Despite their success in completing the tasks, however, they experienced difficulties in knowing where to start and with the site’s information architecture in particular, with interpreting the categories and their labels. The authors concluded that library Web sites fail to take into account how people approach the information problem and often reflect traditional library structures.”

Researchers examined the usability of an academic library Web site. They sought to learn about the problems that users have in interacting with the Web site; finding it not intuitive for the user: not knowing where to begin, while the Web site failed to communicate to the user how to interact with available services.

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(SEB/LBI) -- Distractions and inhibitions regarding locating information sources. Recommendations to enhance library instruction.

Information Literacy of Physical Science Graduate Students in the Information Age (Brown), from: College & Research Libraries, Sept. 1999 (pp. 426-438)
Abstract: “This article reports on findings from a survey exploring the information literacy of physical science graduate students. The study also describes the graduate students’ perceptions of the physical and psychological components that enhance or detract from their ability to find, appraise, and use information and how they feel during the various stages of an information search. This snapshot investigation illustrates that physical science graduate students’ form an information-literate microcosm despite the lack of formal library instruction. The students offer a small number of reasons why they may be inhibited from locating an information source and report experiencing little anxiety as they search for information. They also describe their ideal information-seeking environment as being within the comfort of their home or the convenience of the library. Further, they place some emphasis, but not total reliance, on the capability to connect to the Internet quickly. Relevance, quality, and speed are the cornerstones of a successful search quest. Recommendations for outreach to graduate students who are not native speakers of English are made. Also, suggestions are proposed for library instruction that is specifically designed for, and attracts a greater number of, physical science graduate students.”
Even though librarians should be promoting information literacy, library instruction intended for physical science graduate students has not been well attended by Univ. of Oklahoma students despite encouragement by faculty and flexible scheduling.

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(SEB) -- Behavior observations of children regarding information retrieval to improve search abilities


Intro: “Automation of library processes has been underway since the 1950s first in research and university libraries, later in major public libraries, and now in libraries of all sizes and types. Concurrently, schools have been adopting computers for classroom instruction, beginning in the earliest days of the personal computer in the mid-1970s. Given these parallel developments, it is surprising how little research has been done at the nexus of libraries and education, addressing questions of how to automate libraries for children in ways consonant with their learning, cognitive development, and curriculum. We need to understand more about children’s information-seeking abilities, as we seek both to improve public school education in high technology areas through computer-based science programs and as we seek to link libraries and classrooms on the “information superhighway.” The public school curriculum, particularly in science, is shifting away from rote, textbook learning toward exploratory, hands-on, resource-based “discovery” learning.”

This research focuses on online library catalogs (OPACS) and the use of them in elementary school students, as the tool common across all of today’s libraries. The goal is to evaluate the Library Catalog as it relates to students’ information-searching behavior to design a system with searching mechanisms that build upon children’s natural tendencies to explore and range of skills and knowledge.

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(LBI/OBC) -- How subject librarians can help the user.

The changing role of subject librarians in academic libraries (Pinfield), from: Journal of Librarianship and Information Science, v. 33, no. 1, 2001 (pp.32-38)

Abstract: “Discusses the roles that subject librarians (or ‘subject specialists’) play in contemporary UK academic libraries. Argues that subject librarians, who still form a significant grouping of senior staff in most UK academic libraries, continue to have a significant role to play in the delivery of library services and that applies to both traditional and electronic library services. Discusses the traditional role of subject librarians and analyzes the way in which this role is changing. Those areas where the changing responsibilities are extensions of traditional roles into new areas are pinpointed, together with examples of where subject librarians are performing new roles and adopting new ways of working. Areas where the changing role of subject librarians can be specifically identified include: greater emphasis on liaison with users; advocacy of the collections; adopting new roles; dealing with user enquiries in new ways; working with technical staff; selecting electronic library materials; carrying out more information skills training; having a greater involvement in the implementation of educational technology; team working and project working.”

This article discusses the primary mission of a library: to support the learning and teaching and research activity providing access to information resources for the academic. Using the skills of a subject librarian is one way these goals can be achieved by ensuring that the library remains “user-centered.” Subject librarians can help make sure that services are directed to user needs user needs and stay proactive to changes to service that meet the needs of the next generation of technically savvy researchers.

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(PLP/LBI) -- Making libraries easier to use through a look at the history of bibliographic instruction to help with information literacy.

The History of bibliographic instruction: Changing Trends from books to the electronic world (Salony), from: The Reference Librarian No.51/52, 1995, (pp. 31-51)

From summary: “…In the past hundred years, several librarians have promoted bibliographic instruction in a variety of formats and styles. The literature in library science illustrates similarities and differences in concerns and issues of bibliographic instruction throughout its history…” also: Bibliographic instruction, user education, library instruction, orientation, and information literacy are all terms that we hear when reading or discussing instruction of library users. Bibliographic instruction occurs in various forms such as formal class settings, small group sessions, one-on-one encounters, written guides and brochures, audiovisual presentations, and computer-assisted instruction.”

It is natural to teach search strategies related to the (academic) library use help find materials in its collections. Librarians are also in the process of information literacy which will help researchers deal with the quick rise in information technology. Researchers and students who are information literate would be able to recognize their information needs and use information more effectively. Students need to know about different searching strategies and database selection. Emphasis on systems being easier to use so libraries can be easier to use.

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(PAM) -- How a personalized information gateway can lessen the overwhelming feeling of today’s limitless access to information.

http://webdoc.gwdg.de/edoc/aw/d-lib/dlib/april00/mistlebauer/04mistlebauer.html

Abstract: “Library users who are Web users expect customization and interactivity. MyLibrary is a Cornell University Library initiative to provide numerous personalized library services to Cornell University students, faculty, and staff. Currently, it consists of MyLinks, a tool for collecting and organizing resources for private use by a patron, and MyUpdates, a tool to help scholars stay informed of new resources provided by the library. This article provides an overview of the MyLibrary project, explains the rationale for the development of the service in the library, briefly discusses the hardware and software used for the service, and suggests some of the directions for future developments of the MyLibrary system.”

This study finds that users find the information gateway as overwhelming and desire a more personal space where they can keep resources more personalized to their use. The article feels that “Users want to be in closer communication with the library.” The library should be a place to simplify the use of the countless of resources available.

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(PAM/THF) -- Improving virtual links to compensate for the lack of human presence in today’s information seeking

Establishing our presence in courseware: Adding library services to the virtual classroom (Shank and Dewald), from: Information Technology and Libraries, v.22. no.1 (2006)
http://news.ala.org/ala/lita/litapublications/ital/2201shank.cfm

Abstract: “Course management systems and software (courseware) are increasingly being used to enhance traditional college courses, yet library resources and services are noticeably missing from this venue. Libraries risk being bypassed by this technology and losing relevance to students and faculty if they do not establish their presence in courseware. Librarians need to be proactive in inserting links to resources and to library assistance within the courseware domain in order to retain visibility, increase relevance with students, and strengthen relationships with faculty.”
Consequences related the lack of direct human contact. Students using the courseware described here would not likely develop relationship with any librarians. The sources would be available right from their desktop. The students become virtual library users accessing online databases, catalogs, and other Internet resources. This will hurt them by not being able to develop search skills and utilize the knowledge and skills of real librarians to help them locate the most appropriate resources.

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(PAM) -- Addressing access barriers to digital library to make users feel more at ease using the library’s resources

http://www.press.umich.edu/jep/04-02/bishop.html
Intro.: “Easier and wider access to information is often touted as a primary benefit of digital libraries. Claims such as "the world's information at your fingertips" and "desktop access to entire library collections" are commonplace. This paper examines the nature of access to information resources and the relationship of access to use, allowing us to consider how these alluring visions of easy information availability might be achieved. Measuring and interpreting access and use data within a digital library is complex, however, and the lack of standard metrics across systems makes it especially difficult to develop explanatory frameworks related to digital-library use.

This paper concentrates on the difficulties potential users have in logging into a digital library. To gain access to the digital library in this article users are required to submit their university identification number (ID) with the idea of filling out a questionnaire that collects basic data and provide information how user data will be utilized. Difficulties encountered by searchers regarding understanding access suggest the need for more evaluations (metrics).

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(SEB) -- Measuring users’ perceptions to improve quality of library resources and services

Abstract: This article describes the development and application of a structural equation model which allows librarians to quantitatively measure library users' perceived quality, satisfaction and loyalty with a library as well as the degree to which specific elements of a library's services, collections and environment contribute to those perceptions. The article reports the results of a survey among users at five Danish libraries with particular attention to the Copenhagen Business School Library.

A modeling approach was created to measure the degree of users' perceptions of library value, satisfaction, loyalty, and how basic elements of library services that contribute to these perceptions. The user satisfaction model developed and written about in this article has been concluded to be a very good experience and believed that it can work for different types of libraries. The article also goes on to provide useful information for the continuation of quality improvements of library resources and services.

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(THF) -- The crisis in decline of use of the libraries is creating a paradigm shift that the author argues means librarians play a bigger role than ever in helping users use the library

The Ubiquitous User: A Reexamination of Carlson’s Deserted Library (Martell), from [Guest Editorial in] portal: Libraries and the Academy, v. 5, No. 4, 2005, (pp. 441–453)
Abstract: An examination of traditional output measures—circulation, reserve, in-house use, and reference transactions—from the Association of Research Libraries (ARL), California State University, State
University of New York, University of Maryland, and other libraries reveals declines that may be deeper and more widespread than previously reported. This trend is evident against a background that includes (1) continuing increases in the cost of periodicals, (2) searching for a new paradigm, and (3) the emerging virtual library.

The article is attributing the decline of use of the libraries to the emergence of the digital age, but it argues that users need the assistance of librarians more than ever. It attempts to find what roles librarians play in order to be of greatest benefit to user yet finds that research is spotty and no real sense of urgency to this paradigm shift, yet acknowledge that there is a crisis, such as declines in use may also result in corresponding declines in funding.

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(IPD) -- Signage as way to make libraries a better place for users

Creating the User-friendly library by evaluating patron perception of signage (Bosman, & Rusinek) from: Reference Services Review, V. 25, no. 1, 1997 (pp.71 – 82)

Abstract: Despite all manners of instruction, there is a nagging sense that patrons have difficulty using the library. Further, despite the impact of the World Wide Web, the library “as a place” is important. The library building is seldom given much post-construction thought, although lighting, collection arrangement, service points, signs, and study areas all contribute to a positive learning experience. A committee at Indiana University Northwest Library investigated ways to make the library’s collection and services more accessible by improving signage. This article describes the results of a preliminary and a follow-up survey to evaluate users’ abilities to locate various signs effectively and comparatively analyzes responses from specific classes of participants.

While people have been ignoring the library as the Internet gets more and more used, the use of signage is being ignored to help people find their way around the physical building of the library. This article looks at how effective signs can be to direct users to make their experience at the library a more positive one. It is the strong belief of the authors that signage is a strong contributor to a user-friendly library.

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(OBC) -- Improving online search capabilities to encourage users to make more use of the library

Why are online catalogs still hard to use? (Borgman), from: Journal of the American Society for Information Science, v. 47, no. 7, (pp.493-503), 1996

Abstract: "We return to arguments made 10 years ago … that online catalogs are difficult to use because their design does not incorporate sufficient understanding of searching behavior. … In the short term, we can help make online catalogs easier to use through improved training and documentation that is based on information-seeking behavior, with the caveat that good training is not a substitute for good system design. Our long term goal should be to design intuitive systems that require a minimum of instruction. Given the complexity of the information retrieval problem and the limited capabilities of today’s systems, we are far from achieving that goal. If libraries are to provide primary information services for the networked world, they need to put research results on the information-seeking process into practice in designing the next generation of online public access information retrieval systems."

The article presents the argument that online catalogs continue to be difficult to use because their design does not take into account users’ searching behavior. It focuses on the false belief that a “search is independent of further searches assuming that there is no need to formulate different options to explore a topic. It wants to take the approach that online catalogs should be judged by how well they answer questions and not by how well they match queries, and ease of transferring information to other systems."
(SEB) -- Studying what graduate students are researching at the library to get an idea of how best help them find what they are looking for

Abstract: “We report on a study of graduate students conducting research in libraries, focusing on how they extract and record information as they read. By examining their information recording activities within the context of their work as a whole, it is possible to highlight why students choose particular strategies and styles of recording for what these activities provide both at the time of reading and at subsequent points in time. The implications of these findings for digital library technologies are discussed.”

The article is trying to present a broader view of library use which goes beyond information retrieval. The study may have focused on a small group of library users (graduate students in the arts and humanities); the activities are perceived to be of a general nature in document retrieval given to broad applications.

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(IPD) -- Making the library more appealing by mirroring bookstores and relaxing existing rules

A Place to Belong: The Library as prototype for context diversity (Ibarra), from: ACRL Twelfth National Conference, April 7–10, 2005, Minneapolis, (pp. 3-23).
[Intro.]: “…I [author] knew many academic libraries had changed dramatically since my graduate student days when food was forbidden in the stacks, but the success of large multipurpose bookstores throughout the U.S., and the explosive growth of Internet-driven information systems, apparently spurred many campus libraries to become more user-friendly and community-oriented than ever before… The relaxed library rules, a sense of open architecture and invited intimacy to stay and participate in a community setting was not only intriguing, it also fit with my discoveries about the changing nature diversity in higher education.”

Although academic librarians have tried to keep up with meeting the needs of its various users by imitating bookstores and online sources, they should concern themselves how these changes will evolve with time. In most cases, when new ideas arise the tendency is to approach it with an “out-with-the-old-in-with-the-new mind set.” The author feels it is up to scholars and library historians to determine whether academic libraries are leading the way in helping design and transform higher education for the 21st century.

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(SEB/PAM) -- More research into studying users’ search and information seeking patterns and responding to their needs to better improve their retrieval abilities

[Abstract]: The article discusses the users’ perspective of information seeking. A model of the information search process is presented derived from a series of five studies investigating common experiences of users in information seeking situations. The cognitive and affective aspects of the process of information seeking suggest a gap between the users’ natural process of information use and the information system and intermediaries' traditional patterns of information provision.”

This research concentrates on the search process and how to provide insights into methodological issues while opening many questions for further research. It acknowledges that the education of users of information systems is becoming more important with each technological advance and that merely incorporating into more education programs is part of the solution. Again the message of more exploration (studies, surveys) is brought up.

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Measure by measure: assessing the viability of the physical library (Hiller), from: The Bottom Line: Managing Library Finances, v. 17, no. 4, 2004, (pp. 126-131)

Introduction: “Library use patterns are changing dramatically as information technology, online resources and library services have become more readily available and user friendly. Library programs designed to promote user self-sufficiency, and to provide access to and delivery of information to the user regardless of place or time, have enabled many in the university community to do their research without coming to the physical library. Many libraries have begun to see a decline in the number of print items used, reference questions posed, and visits to the library, along with a corresponding increase in the use of library-provided electronic resources and services. These changes have profound implications for how large academic research libraries in North America are physically structured, especially those with subject specialized branch libraries. As electronic resources become ubiquitous in many subject areas, traditional use declines, university budgets tighten further, and space becomes an increasingly precious campus commodity, academic libraries and their institutional administrators are questioning the viability of the physical library, especially branch libraries.

The idea behind this article is one of a financial dilemma caused by less use of the physical library. It is looking at reducing or eliminating branch libraries to help save money, consolidate things to the main branch as this could be a way to see an increase in traffic at the main branch. It concludes that a successful academic library will reach out to the community to develop a method of offering support within their physical space.

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The International Children’s Digital Library: Description and analysis of first use (Farber, et al.), from http://firstmonday.org/issues/issue8_5/druin/index.html (and http://www.icdlbooks.org/) Abstract: In this paper we describe the first version of the International Children’s Digital Library (ICDL). As a five year research project, its mission is to enable children to access and read an international collection of children’s books through the development of new interface technologies. This paper will describe the need for such research, our work in the context of other digital libraries for children, and an initial analysis of the first seven weeks of the ICDL’s public use on the web.

This paper looks at molding technology (in this case, digital libraries) to make it children user-friendly. It recognizes that there is significant research devoted to digital libraries but that are targeted to older students and adults. It is the hope that the on-line community mentioned in the article will motivate children to become more involved with the library and keep them coming back while helping them to interact with each other.

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Alternative Strategies for Promoting Information Literacy (Galvin), from: The Journal of Academic Librarianship, v. 31, No. 4, (pp 352–357), 2005

[Abstract]: “This article considers strategies for promoting information literacy other than classroom instruction. Library services, such as the creation of pathfinders, excellent reference practices, and provision of user-friendly Web pages, are considered in terms of how they might be useful in supporting an information literacy initiative.”

Also: “It is the librarian’s responsibility to be attentive to the reference encounter and the opportunities for teaching presented in it, to guide the student to appropriate and valid online resources, and to teach the student to evaluate information found online.—p.354
The article is promoting information literacy in a variety of ways, including the need of librarians to use a combination of approaches and to be persistent in their efforts to help patrons. The push here is that educating library users is the responsibility of the librarian and to help promote lifelong learning.

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(IPD/LBI) – the librarians’ role of keeping up with technology to support the needs of the users

Information Literacy as a Barrier (Ford), from 60th IFLA General Conference - Conference Proceedings - August 21-27, 1994, http://www.ifla.org/IV/ifla60/60-forb.htm
Abstract: “The 60th General Conference of IFLA, Libraries and Social Development is designed to promote experience sharing on the role played by libraries in the improvement of living conditions. Information literacy addresses new library technologies and library research and training for social development. It is particularly relevant in the science and technology areas.”

The increasing use of computers has coincided with the rapid growth of information technology and librarians must continue to demonstrate that they are an integral part of this paradigm shift and must continue to play a role in providing education to information seekers. Users of the libraries need knowledge of resources and technologies as they gather information from sources.