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E-JASL: The Electronic Journal of Academic  
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Summer 2006

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# Electronic Journal of Academic and Special Librarianship



v. 7 no. 2 (Summer 2006)

## The Emerging Technology: 21<sup>st</sup> Century Web Based Environments and Their Resultant Effect on the Work Responsibilities of Academic Reference Librarians Were the Predictions Correct?

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### Abstract

This paper will examine the changing work responsibilities and required skills of academic reference librarians in the 21<sup>st</sup> century due to the evolving advancements in technology. For the purpose of the paper, the term “Web Based Environment” is defined as any library that utilizes local area networks, wide area networks, the Internet, and Intranets to make available electronic information resources. This access is made available to the user community. Utilization of these resources can be obtained both locally and remotely and, therefore, it is understood that the use of these sources may be executed by physically walking into a university library or by utilizing the services in a non-library, off-campus location.

### Introduction

Within the last decade much has been written about the technological changes in academic libraries. Most academic libraries have developed specialized home pages using the World Wide Web; these home pages have given patrons the capability of special access to reference sources held in the collection. By simply using the Internet, patrons can access any online library home page. Once patrons access the library site they are usually led to a user-friendly screen and by using a password they can freely navigate around the site. This execution is useful and necessary to search library catalogs and obtain library holdings and services.

These services usually include virtual reference advice and a detailed search of indexing and abstracting databases for journal or newspaper articles including the

downloading of full-text articles. The emerging technology and the digitization of this information has made it possible for patrons to browse and access library collections online in the library or in the privacy of their own homes with the use of a desktop computer, modem, and an Internet Service Provider (ISP).

### **What does the literature indicate will happen to the role of the reference librarian?**

Butler (1995) wrote an article that addresses her campus constituents and gives them a direction to work towards when she forecasts that by the year 2000 the traditional print library would be transformed into what is known as the “electronic library.” She states:

The University Libraries will serve as the key information provider to the University and the hub of the academic information component of the Campus Wide Information System (CWIS). Many resources and services will be delivered directly to the desktops of faculty, students and staff. These desktops may be in offices, classrooms, dormitory rooms or home offices (p. 1).

Her perception of what she thinks her academic library would look like is very similar to the actual way that libraries appear today. The advancement of technology has changed the physical makeup of libraries and their functions and, thus, has made an impact on the way information is delivered. It is now possible for libraries to share information with their patrons without worrying about the geographical limitations of delivering information in the traditional form. This sharing doesn’t come without a cost; it impacts academic reference librarians work responsibilities.

In her article, Ezzell (1998) chronologically traces the evolution of academic reference librarianship in an effort to document its transformation over the past thirty years. It is clear that the fast-paced growth in technology and the resultant plethora of information access are some of the main reasons for the changing work-related responsibilities that academic reference librarians encounter. This reality is pointed out when she compares the job advertisements over several decades to show the increase in the size of written communication used to describe and advertise the duties of reference librarian positions. She indicates that there is also a sharp increase in the technology skills wanted, including online searching and when she examines the most recent position advertisements it appears the term instruction has now taken on a new meaning. In earlier years instruction was thought of as something reference librarians did while helping students at the desk with their assignments (p. 96). Nowadays the description of the term is much broader. Instruction can be given at any time and place where the technology is compatible. In addition, the delivery of instruction doesn’t

have to be in person or necessarily directed by the librarian. Instruction has become a larger component of what librarians are being asked to spend their time planning.

According to Stanley & Lyandres (1998) librarians in the 21<sup>st</sup> century must creatively instruct patrons and empower them to independently access information and make use of the tools and facilities. There is a recognition that students may not necessarily come up to a reference desk for assistance as their confidence with using technology grows, further confusing them about the distinct differences between information literacy and computer literacy. The authors refer to several universities that have increased access to the library through innovative services. These services don't necessarily require the librarian to be in the library to facilitate them and in many cases the librarian must travel to the potential user. In some teaching situations the content of the lessons is only created and introduced by librarians in the form of a module, online tutorial or other self-paced applications (p. 100). Just as the initial discussion revolved around incoming requests from remote locations to established library facilities, the electronic library can reside at any location and so can the tools to instruct students to use such information. Electronic technology offers a complete spectrum of possible changes according to the users' needs and requirements. Because connectivity can be to or from anywhere it allows the user and provider to be located far and wide, therefore, the possibilities of access and locations of reference authorities are limited only by the human mind. However, the literature continues to point out that the predicted demise of the "brick and mortar" library facility is, indeed, premature as most recent studies show an increase in library traffic. Therefore, the employment future of reference academic librarians appears to be secure despite the changes in how and where we access information. This security does not mean that the duties of librarians will not change or become more complicated as the increasing amounts of information access swells.

In an issue of *American Libraries*, Gosling (2000) briefly explores the elements of the impact of the electronic age and access to information on libraries and librarians. He criticizes earlier projections that "you will no longer need to leave your home or office to access information and educational courses, view art, or hear concerts" (p. 44). While he explores some of the reasons and the evolution of what has happened in the past few years, he concludes that real statistics "...suggest that just the opposite is occurring. Although many people are using Internet resources for a variety of purposes, the service institution as place remains an important and expanding element of the information delivery chain" (p. 44). Therefore, the need for librarians to be specifically trained in the new technologies is paramount; there will be an increase in the demand for their services and it is obvious that there will be more work for those willing to evolve with the changing library structure.

However, when Rieh (1999) addresses the evolution of the reference service environment the author implies that librarians have a hard time relinquishing work that was previously in their exclusive domain and is now routinely completed by support staff or paraprofessionals. This role conflict becomes more apparent as paraprofessionals start to play a larger role in reference services. It is Rieh's thought that while it may be difficult for librarians to divide up reference duties with support staff, in the long run, the payback for these collegial relationships will be apparent. (p. 181) This belief may be due to the fact that reference librarians have an expanded realm of work-related responsibilities that now pulls them away from the desk and requires them to support patrons on diverse platforms. This requires a more expanded technical expertise than in the past. Because of declining budgets and evolving technology, most libraries no longer hire librarians with the thought that reference work will be their main responsibility. This shift has led several researchers to recommend alternative "reference service models" as compared to the traditional desk model.

According to Palmer (1999), an alternative model called the "research consultation model" has been adopted by Brandeis University. The university has decided to adopt this example, eliminate the traditional reference desk and, instead, establish an information desk staffed by paraprofessionals and graduate students. The support staff are trained to provide directions to quick reference information. More complicated questions are referred to the "research consultation office" which is occupied by several librarians who answer questions that are truly research related and require mastery of the resources (p. 3). This type of altered configuration of services may be an acknowledgement of the growing importance of academic reference librarians and the value of their time when it comes to helping patrons locate and interpret a complex and ever-increasing amount of information. The model shifts the burden of routine tasks to support staff and affords librarians an opportunity to work with students and faculty in need of in-depth research assistance.

As information multiplies and becomes readily available in a range of formats, students are becoming more confused over which types of resources are acceptable. Because of this uncertainty we are seeing a greater push for early instruction of information literacy concepts to be formally embedded within general education programs. In 2005, Eastern Connecticut State University went through the process of revamping its general education requirements. When Eastern, a Public Liberal Arts University, passed its new general education proposal several unique and mandated integrated curricula elements were included: Information Literacy, Communications, Ethics, and Critical Thinking. All are to be embedded into tiered courses and assessment for each will be part of the new general education program. Additionally, all freshman students will receive a library tour and library introduction CD.

Previously instruction was delivered to students upon the request of faculty and at best was hit or miss depending on the relationship between the librarian and faculty member.

While this type of inclusion is very much appreciated by information professionals who understand the importance of this type of participation and its impact on students, it will surely alter the way services are delivered increasing the workload of reference librarians at Eastern. Without additional library faculty positions forthcoming, the library faculty and director may have to rethink the current configuration of reference desk coverage. It may also be that this group will be asked to do more with less support than in the past.

This thought is supported by Scherrer (2004) when she affirms “Librarians reported that they were teaching more, leaving the library to serve patrons at their point of need, designing Web pages, developing liaison programs, providing consumers with health information, and engaging in many creative activities” (p. 227) The jump to formal instruction of information has also required that librarians be versed in the latest teaching methodologies and technologies to support these extended responsibilities. This new dimension includes understanding how students process information as well as finding the appropriate way to deliver new content, making the learning interesting and informative. Greater focus on assessment has further complicated the lives of reference librarians as many of them are now being asked to participate in this process.

Gosling (2000) reports on a user study that was conducted at the University of Michigan. The research focuses on the findings of a library user instruction initiative in which the users were trained to use electronic resources. It was thought that this type of instruction would transform a person who required the assistance of a librarian to find information into a self-sufficient user, one who could access his/her own information with very little assistance from the librarian. It was concluded that although the initial transformation was positive, the newness soon wore off. Once the amount of electronic information increased the user was overwhelmed, and, as a result of this reaction, once again required the services of a librarian to help navigate the information. (p. 45) This is a clear indication that ongoing instruction and learning will be required for both the student and the librarian-teacher. Therefore, it is safe to say that although the duties of librarians are changing, librarians are, indeed, needed more than ever to assist in these new endeavors.

Branin, Groen & Thorin (2000) point out librarians whose titles are more defined such as “...collection managers, subject specialists, and bibliographers must move from a primarily local, print collection perspective to broader vision of ‘knowledge management’—just as they had once been asked to move from ‘collection

development' to 'collection management'" (p. 10). This could be seen as a directive that requires librarians to change their mindsets and see the bigger picture. This is necessary to grow with the technology, increasing resources and formats and come up with creative ways of managing the change. Librarians must recognize that information comes to us in many forms. No longer are librarians just keepers of the books. Harris & Hannah (1996) go one step further in their justification for change and state:

It is time for all librarians to abandon nostalgic and misguided defenses of the book and move aggressively to discover ways to make libraries relevant to the clients that constitute the only justification for the existence of libraries in any era (p. 5).

This view clearly takes into account the changing technological needs of the patron and the newer collection formats, and instructs librarians to get on board with the transformation while asking them to anticipate and participate in a new client-centered role. This observation also considers the users' and institutions' needs and places less emphasis on the decisions of the individual librarian.

Massey-Burzio (1998) continues this thought when they published the findings of a three-part focus group study. As stated in the second part of the study, "It is important that librarians confront the fact that our profession could become dangerously marginal in academic life if we are not more responsive to actual user needs and preferences" (p. 4).

This is an indication that we must believe that patrons are our main focus and, therefore, we must understand and meet their wants and needs. Accordingly, librarians must be professionals who are knowledgeable and proactive in reaching out to our patrons in a responsible way. Part of the librarians' new responsibilities will be to heighten customer service and increase staff/patron relations.

In 2003, Eastern Connecticut State University started a "Reserve a Librarian" service with the purpose of personalizing assistance for students in education programs who are having problems navigating library databases and print resources making it difficult for them to find adequate information for research projects. The service was first launched through e-mails sent to education faculty and by verbal announcements during user education classes. On average, the service receives 10-12 requests per month. The meeting time and place are arranged by telephone or e-mail and appointments can last from 45-90 minutes. These requests usually take place during peak times when information literacy instruction classes for education students are in full swing. The service was initially proposed to meet the needs of a specialized group of patrons who may not otherwise ask for assistance by approaching a busy reference desk to get their research questions answered. What we have found by providing this

service is that it is very “student friendly” but also labor intensive. The Library added this service not as a substitute for another, but as an additional outreach commitment in an effort to meet the needs of a specific group of users. As technology expands and its use becomes more essential, we are seeing more libraries add services in an effort to meet all user needs while retaining the previous services that were once thought to be adequate.

Meeting users’ needs is consequential according to Nitecki (1996) and will determine the job security of academic librarians. The author asserts:

Some librarians are shifting their perspective of library service to represent a user-driven view. They are abandoning the premise that maximum use of the library is the primary goal and, instead, are focusing on the process by which library users obtain and assimilate information. The assessment of how well a library succeeds depends on the user as judge of quality (p. 4).

This is a true acknowledgement that the user is determining what constitutes a library and how, where and if they will use the services. With this in mind, reference librarians must analyze the users’ needs and let them set the parameters as to where they want to obtain their services and make the necessary adjustments. This would require that librarians adjust their mindset and belief that services can only be received in a library setting. Several institutions have started to experiment with new and innovative reference service models. These models bring services to the user. Lee Hisle (2005) reports on a number of academic libraries that are coming up with creative and new ways to reach students and faculty.

The University of Florida has recognized that library services can be spread out over the campus and beyond the library walls. As an enhancement to the traditional reference desk services, librarians are traveling with their skills and wireless laptops and setting up kiosks and other information stations where students can ask for assistance. In many of the models talked about there is an understanding of collaboration between the library and information technology department. Meeting the users’ needs by offering them a one stop service point for which they can do research, study, get assistance with their latest technology devices as well as eat and relax has become a very common and popular setup. (p. 3) There is a greater awareness that students are more complex than in the past and have many more competing priorities for their time. Additional requests from this population are creating an altered form of reference work. This new direction of information assistance and delivery is foreign to many trained on traditional reference work. How and at what extent we should be of assistance to these changing demands is the topic of discussion in many libraries.



In their article *From the other side of the reference desk: A focus group study*, Massey-Burzio (1998) suggests:

The effect of remote use is beginning to be felt in building use statistics and at library service points. For example, at the main library at Johns Hopkins University, remote use of the online cataloged jumped 111% between 1994/1995 and 1995/1996. Building use declined 2% or 11,550 entrances. All information/service desks dropped with the exception of the Research Consultation Service (p.1).

It is clear that as online systems become easier and more sophisticated, and as additional information is available remotely, the role of librarian is changing and the requirement to learn more about the duties of newly created responsibilities at a faster pace is evident.

In a survey conducted by Tenopir & Ennis (1998), it is reported that university reference librarians experience a wide variety of both positive and negative effects as a result of the broad and rapid changes of electronic technology and the growth of the Internet. The survey addresses the topic of instruction by mentioning:

In a 1991 survey, several librarians predicted the end of library instruction, as they saw new more user-friendly services emerging and the computer skills of students increasing. By 1997, almost all survey respondents admitted the need for more instruction—and more intense instruction. (p. 3)

Reference librarians also overestimate the patrons' computer literacy and technical strengths; it was determined that these skills would need to be taught. Many reference librarians find that patrons possess a wide range of experience and skills. The gap ranges from the very competent user to the computer illiterate patron. Masse-Burzio (1998) addresses this matter in part two of a three-part study and confirms:

The gap between the reality of the complexity of a library and the patron's perception of it as intuitive is one we clearly need to close and it will be a major challenge to figure out how to do so. (p. 1)

Although librarians have always participated in instruction activities, the increasing amount of reference materials available and the various formats of these tools has contributed to an increase in the time spent assisting each patron. In a case study conducted by Rice-Lively & Rancine (1997), when participants were asked about the effects of technology and the changing duties of librarians, it was found that they didn't feel that the work had changed. They are still determining information users' needs and helping those users locate materials. For some, the newness of the technology and the use of the tools required to assist patrons are beneficial to their

professional growth as librarians and motivates them to learn new skills. These skills are why some of the participants were hired in jobs with titles that had not previously existed within the library world. (p. 36)

With the increasing amount of instruction delivered there is a need to enhance the means of communication to advertise the range of collections that support the teaching mission. Because the resources have become so diverse, there is now a greater importance to have web pages, pathfinders, subject guides, and tutorials directing patrons to the proper information and assistance. In 2005, librarians at Eastern Connecticut State University were asked by the director of library services to create subject guide web pages. While many of The library faculty had their own individually maintained departmental websites that included basic information such as hours of operation, most didn't have standardized pages that incorporated information regarding library resources relevant to support student and faculty research endeavors.

The new subject guides were revealed to teaching faculty during a liaison luncheon. The overall response was very favorable but none of the librarians would have predicted that this project would lead to the future investigation of software that would allow ECSU librarians to create and maintain their own personalized content for additional pages. Recently, librarians at Eastern were introduced to Macromedia Contribute 3, a webpage creator and editor. This exciting new piece of technology will help with the content management of personalized subject pages that will add additional responsibility to an ever-increasing workload. Some librarians will welcome this addition, others will protest that the learning curve is too much and will not find the extra time needed to adjust. Consequently, we see the characteristics of the duties of librarianship changing. As librarians we must now think of how to market our product and get it into the hands of our patrons. One overlooked tool of our marketing is instruction. Because research shows us that our users are functioning at varying levels we must adjust our teaching to facilitate all levels of proficiency. Instruction must be ongoing for our patrons and for librarians. Staying ahead of the technological advancements through professional training is critical for librarians and the profession. These learning opportunities may not always be found on the job.

It is up to the individual professional to chase the skills needed to become competent and confident in their job duties. It's an exciting time with many opportunities to lead in the information age. If we don't become aggressive in our roles as information providers our power as knowledge middlemen will be seized, snatched away by those who claim to perform the tasks faster and with less protest. This will surely devalue our profession.

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