

***OVERCOMING THE DIGITAL DIVIDE:
USING LIBRARIES TO BRIDGE THE GAP***

Introduction

As technologies become more prevalent, there is a clear divide growing between those who are versed in the use of technology and those who are not. This divide is commonly referred to in the information science literature as the "digital divide" (Jackson, 2004). Rather than blithely forging forward in pursuit of technology, consideration needs to be given to those communities left behind by this technical revolution. Traditionally, the perception of libraries is of a physical space used to gather information from books, magazines, and maybe the library staff. Instead of perpetuating this narrow view of the library, libraries face an opportunity to become the bridge spanning the digital divide. By maximizing resources and actively pursuing a targeted strategy, libraries are poised to help communities overcome deficiencies in technical skills and become confident users of technology.

Perceptions of the Library

One of the main issues libraries face is the perception that libraries are hard to use. Patrons are intimidated by the physical space of the library. Users often feel that their skills are inadequate to navigate the card catalogs and the organization of the books. There is also a perceived inability to articulate questions; patrons struggle with language to convey the right question to gather the information they are seeking. In a focus group of undergraduate students, one of their top complaints was their failure to "phrase things just right" (Star, Bowker, & Neumann, 2003). Presumably, undergraduates are a unique user group in that they are brought together with a common goal of pursuing higher education. Academic libraries on college campuses actively provide programming that offers undergraduate users opportunities to learn how to use the library. In this case, user education becomes the tool to establish a common ground between users and information professionals (Yakel, 2002). Libraries actively pursue education program to form a shared position that is non-threatening and inviting to insecure and uncertain users. Users are *taught* how to use the resources in the library from the catalog to technology.

A secondary issue facing libraries is the perception that the staff is not a useful resource. During a reference interaction, it was found that librarians rarely engage in a reference interview. (Durrance, 1995). Rather than engaging the patron in a need-based interview, the librarian would more often than not point in the general direction of the resource or walk to the general area of the answer. Interesting enough, and almost contrary to expectations, if the user of the library was provided with the name of the librarian assisting them, the user would return to that librarian as a resource again (Durrance, 1995). This willingness to return to a librarian who may or may not answer

the information need of a user conveys that the user attributes a level of authority and trust to the librarian.

Given the perceptions of the library, it initially appears improbable that libraries are the appropriate institution to bridge the digital divide. But the Willingness to Return research findings regarding the reference librarian experience is the first indicator the library can become a pivotal resource in overcoming user's technological experience; if users can make a personal connection within the library environment, they will return to use the institution again as a resource (Durrance, 1995). This places the library in a powerful position within the greater community it serves.

Inquiry and Technology

In addition to the uncertainty users may have of the library, there is an equal amount of uncertainty and skepticism regarding technology. While technology makes advances forward, there is a significant population of people who are not participating in this pivotal movement. There are many explanations for why different groups are being left behind as technology propels other segments ahead. It can be caused by socio-economics disadvantages, belief that individuals may be too old to learn technology, or a basic unawareness of the technology that seems to be apparent to others. One of the current challenges faced by Computer-Supported Cooperative Work (CSCW) movement is to recognize society and technology are fundamentally integrated (Ackerman, 2000). To simply view technology in isolation is to ignore the social framework that should shape it. This is not to say this social-technical gap will ever be bridged completely. Technical systems will never be able to fully simulate how people form communities and social networks. Instead, technology needs to be designed to integrate with these communities and networks. Although CSCW is primarily design focused, the library space is a place for technical and social integration.

Contextual inquiry is the study of users doing work in the environment they actually do their work, examining the systems and tools used to accomplish tasks. In a study of malfunctioning copy machines, contextual inquiry was used to discover that the machines were not malfunctioning or too complicated to understand (Suchman, Bloomberg, Orr, & Trigg, 1999). Rather, it was found the workers required *training* on how to use the new copy machines. This study illustrates the positive impact training can have on users. New technology can be perceived as complicated or difficult to learn and use. Because users perceive the new technology as an insurmountable barrier to work; the barrier prevents the work from being completed. With appropriate education of the new system, users will learn to overcome the initial learning curve and successfully adopt the new technology.

Applying a similar line of inquiry and evaluation, Fisher, Durrance, and Bouch Hinton, were able to study the impact of social programming in the Queens Borough Public Libraries on immigrant users (2004). Through outreach programs and social networking, immigrants to Queens, New York quickly learn the library is a safe source

for information and resources. In this case, safe is emphasized in relationship to the immigrant's legal status in this country. By gaining the immigrants trust, the library is able to establish a solid foundation in which to build a tighter relationship with immigrant users. Not only are resources such as newspapers and magazines provided in various languages, staff members are in many cases fluent in visitors' native languages.

Similar to the example of learning how to use the new copying machine, immigrant users need to learn how to use the library. Tools and resource guides are provided to users in their native language. By helping these users learn to navigate the library system, immigrant users gain confidence in the library as a resource to help them navigate the potentially confusing transition to a new country, with a new language and culture. Ultimately, these users learn to trust the librarians themselves. By proactively pursuing a clear social agenda, to help new immigrants successively acclimate to the U.S., the Queens Borough Public Library system plays a key role in helping users overcome an information divide.

As immigrants discover, understand, and use the American public library-they secure confidence, knowledge, and skill to utilize library resources and staff to help them to succeed in their new environment (Fisher, Durrance, & Bouch Hinton, 2004).

In order for libraries to help non-technical communities transition to a technology-user community, library staff will need to become aware of the issues users will face. In learning to evaluate systems and resources, new technology users will need to learn to make informed judgments regarding the information they are accessing. In the case of the Web, users are especially challenged to be critical of their sources. Because there is not a standard for materials posted to the web, users are forced to rely on their own judgment. In a research study of 16 professors and graduate students, the selection and judgment skills of participants while searching websites was analyzed (Rieh, 2002). Subjects in this study were required to complete logs, provide think out-loud information, and monitoring while using the web. They were also interviewed after the search. It was found that users of the web are constantly required to make judgments regarding credibility and authority. Given the background of this specific group, it was not surprising they valued academic resources as more credible. The findings of this study can be applied in a library program designed to help new technology users evaluate resources. For example, workshops on evaluation and judgment could be a component of technology training services provided in the library to the community.

In a study of information seeking behavior in the home, users recorded their home Internet activity in a log and were subsequently interviewed regarding their experiences (Rieh, 2004). It was discovered that the home Internet use expands beyond the physical environment of the home. This suggests that information seeking can take place outside of the formal constraints of work or perhaps school. In this way, the library can be used as a bridge between formal spaces (work, school) and informal places (home), especially

in the instances when a user does not have access to technology in the home. It is important to note that the subjects participating in this study all had access to high-speed Internet. This suggests a level of user-skill in the user population studied. Typically high-speed Internet is a more expensive service than a dial-up connection. The appeal of the high-speed Internet is the faster connection it provides; therefore this knowledge of high-speed Internet implies a higher use and understanding of the Web. Overall, it was found that access to the Internet at home increased users' everyday information seeking behavior. The more available technology is to the user, the more likely they are going to use it as a tool to solve information needs. This study can be used as a basis to promote the idea that technology can help all communities maximize their information seeking behavior with an increased use of technology and the Internet in particular. In particular, libraries can be seen as a resource to provide access to this technology.

Technology in Communities

One of the larger issues in the “digital divide” is the concern that low income communities are being left behind. To understand the impact of technology on economically challenged communities, a three year long-term study was conducted. The HomeNet experiment was an attempt to understand the long-term impact of Internet use on low income households, the effect of technology on their psychological well-being, and their connection to their community (Jackson, 2004). The participants were all low income, and over half were African-American. They were all provided with laptops, Internet access, and in-home technical support for three years in exchange for participating in the study. Initially, the participants reported negative psychological and social effects. Rather than strengthening their ties to their social networks and greater community, the Internet served to isolate users. Overall use of the computers and Internet declined each year. It appeared that the introduction of technology was not helping this community.

But, in the third year, researchers found for the users who continued with the study became more *efficient* users, even as their use decreased. It was also discovered if the user had pre-existing close social ties the Internet did not adversely affect those ties. Instead the Internet, and more specifically email, served to provide an additional medium for individuals to maintain contact with members of their community. Overtime the number of email communications increased. Interestingly enough, participants learned to become wary of using communication tools that did not offer complete transparency. In the case of email, users were fairly confident they knew exactly who they were corresponding with, unlike chat rooms and discussion boards in which they could not be certain of the user's identity.

The most important finding in this study is that third-year users who continued to access to the Internet were positively affected. In fact, the Internet provided an opportunity to strengthen already existing communities. It was determined that providing Internet access may increase the motivation for learning. It is also important to note that email was not an effective communication tool if the user did not have a population of

email users to communicate with. For example, if you are provided with email access but no-one else in your community has access, you are less likely to use email frequently. This is an opportunity for libraries to serve both as a physical space for the community to interact and an access point to technology. The entire community is served by the library, not just a few participants in a study. This study did not address what happened to the user's access to technology (free computer and Internet access) once it was finished. The library could be the place for these users to continue to use technology.

In a unique housing community in Canada, an entire virtual community was studied. In an attempt to understand if technology, specifically the Internet, weakens or strengthens community ties an entire subdivision, "Netville" was provided with free Internet access (Hampton & Wellman, 2003). Critics of the project asserted Internet access would weaken the ties among people and damage the community, similar to the findings of the HomeNet study's first two years. Despite critics' misgivings, it was found that the community ties in Netville strengthened. Individuals reported an increase in the size of their community, and a greater connection to the community. Users were able to establish a grass roots movement because of their increased connection to the community. The Internet became a network this community used as a tool to facilitate collective action. While the intent was for the entire community to have free Internet access, not all members were able to participate. This inadvertently provided the researchers with a group of users to compare to the wired community. It was found that Internet provided users with the opportunity to strengthen ties and to not be limited by geographic barriers. At the end of the report, the researchers noted that while the digital divide is decreasing, there is concern that low income communities are still a main concern:

Even if low income communities reach a critical mass of users, different skills levels and uses of the technology may mean the trend is less pronounced or does not occur among those who are already the most underprivileged of social, human, and financial capital (Hampton & Wellman, 2003).

This highlights an opportunity for the library to provide technology resources to communities. Community ties are strengthened when the Internet is available to promote communication. The issue becomes the need to provide access and training, which the library is well positioned to do.

Models and Opportunities

In their research paper "Determining how Libraries and Librarian Help," Durrance and Fisher highlight three programs implemented in libraries to help communities overcome the digital divide while reflecting the specific mission statement of each institution. (2003). Library outreach programs in Austin, Texas, Flint, Michigan, and the above mentioned Queens Borough, New York study were all presented as models

of how libraries are responding to their particular community's need. Because the Queens Borough Public Library is presented earlier in this paper, the focus will shift to the programs in Austin and Flint.

In Austin, an after school program is designed to provide teen-agers a space to use computers and the Internet. The librarians are trained to help the teen-agers establish email accounts and to participate in virtual pen-pal groups (Fisher and Durrance). The goal of this program is to establish levels of proficiency with the technology and a level of trust in the library. The library establishes an important roll in the community while working to minimize the digital divide in teen-agers. Parents can trust in knowing that their children are engaging in an educational activity after school, teen-agers gain important technical skills, and the library reflects the goals of their mission statement to help the greater community.

Flint, Michigan is an economically depressed community. The downsizing and closure of the main industry supporting the area resulted in many families leaving the area and fewer opportunities for those who remained. For the teen-agers who remained, the Flint Library developed an after-school program to foster technology and communication skills. The students were assigned projects to assist in helping local businesses and community organizations develop web sites. The library presents an opportunity for the students to learn new skills and achieve a sense of ownership within the community.

Conclusion

The digital divide exists. The question becomes can the gap be narrowed? The answer is yes. Libraries are in the unique position to help bridge the divide. As shown with the Willingness to Return study (Durrance, 1995), library users are willing to frequent the library even if their information seeking needs are not met. With training and an understanding of a community's needs, the Library can become the focal point for bringing the community and technology together. The current research on HomeNet (Jackson, et.al.), Netville (Hampton and Wellman), home users (Rieh), and Queens, Flint, and Austin Libraries (Fisher, Durrance) all represent successful examples to be modeled by other libraries and communities. Libraries can work to promote their mission through partnerships with local schools, small businesses, religious organizations, senior groups, and day-care centers. Users are willing to use technical library programs if they have awareness of them. If the library establishes and promotes technology focused programs, demonstrating a willingness to *teach* and *train* users, the community will respond.

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