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## **Building bridges for seniors: Older adults and the digital divide**

**Abstract:** Bridging the digital divide is a multi-faceted challenge. Information providers, intermediaries, and users each bear some degree of responsibility for coming together in this area. In this paper, the author reports on three studies, each of which delved into the question of how older adults are coping with the world of computers and the Internet. The research was conducted by graduate students working under the author's supervision. In one study older adults visiting community senior centres were surveyed about their familiarity with and access to the World Wide Web. Differences between the 'young old' and the 'old old' were noted. In another study, interviews with seniors living in retirement homes were conducted to determine accessibility and attitudes towards computers. In the third study, administrators and program planners at three public library systems were questioned about how they were meeting the challenge of training older adults in the use of computers and the Internet.

The paper brings together the findings from these three recent and previously unreported studies in order to show how some users and librarians are confronting the problem of the digital divide. It then adds those findings from the author's own research into the information seeking behaviour of older adults which deal with computer and Internet use. In those studies, older adults living in seniors' residences and others living independently were asked about their computer use. The author asks whether the findings from his own research and that of his students is complementary or at variance. He also builds upon his own research to provide a framework for understanding how the information professions can respond to the needs of older adults in a computer age and suggests some areas of potential future research.

The paper addresses shows that though access is sometimes the problem, there are also attitudes of resistance to overcome and learning that has to take place. Thus the paper moves from access concerns to what some public library systems are doing to provide training specific to the needs of older adults. Both qualitative and quantitative methods are employed.

**Résumé:** Lier le fossé numérique est un défi multi-à facettes. Les fournisseurs de l'information, les intermédiaires, et ceux qui utilisent l'information partagent la responsabilité de se joindre dans cet effort. Dans ce memoire, l'auteur fait un rapport sur trois études qui explorent la question des plus vieux adultes et leur facilité dans le monde des ordinateurs et de l'Internet. La recherche a été menée par les étudiants de deuxième cycle (les étudiants gradués) qui ont travaillé sous la surveillance. Dans une étude spécifique, des plus vieux adultes qui visitent les centres aînés ont été inspectés au sujet de leur familiarité avec le World Wide Web et leur accès au World Wide Web. On a noté les différences entre le >jeune vieux' et le 'vieux vieux'. Dans une autre étude, on a mené les entrevues avec les aînés qui habitent dans les maisons de la retraite pour déterminer non pas seulement leurs attitudes vers les ordinateurs mais aussi leur accès aux ordinateurs. Dans la troisième étude, les administrateurs et les planificateurs du programme, travaillant à trois bibliothèques publiques, ont été questionné en ce qui conerne la méthode de se former les plus vieux adultes dans l'usage des ordinateurs et de l'Internet.

Ce mémoire réunit les conclusions de ces trois études récentes et non signalées pour montrer la méthode qu'emploient les utilisateurs de l'information aussi bien que les bibliothécaires en confrontant le problème du fossé numérique. Ce mémoire ajoute aussi les conclusions de la recherche personnelle de l'auteur sur le behaviour des plus vieux adultes et leur recherche pour l'information et leur utilisation des

ordinateur et de l'Internet. Dans ces études, on a posé des questions aux plus vieux adultes qui vivent dans les résidences pour les aînés et d'autres qui vivent indépendamment en ce qui concerne leur usage de l'ordinateur. L'auteur se demande si les conclusions de sa propre recherche et celle de ses étudiants sont complémentaires ou en désaccord. Il continue sa recherche du passé pour mieux comprendre comment les professions de l'information peuvent correspondre aux besoins des plus vieux adultes dans l'âge de l'ordinateur, suggérant quelques directions pour sa recherche à l'avenir.

Ce mémoire montre que pourtant l'accès à l'information est quelquefois le problème, il y a aussi les attitudes de résistance à surmonter et l'apprentissage doit se passer. Donc, ce mémoire explore d'abord la question de l'accès à l'information pour les plus vieux adultes et ensuite il continue avec une discussion des méthodes qu'utilisent les bibliothécaires publics pour donner la formation qui correspond aux besoins des plus vieux adultes. Les méthodes qualitatives et quantitatives sont employées dans la recherche de l'auteur.

Bridging the digital divide is a multi-faceted challenge. Information providers, intermediaries, and users each bear some degree of responsibility for coming together in this area. Though access is sometimes the problem, there are also attitudes of resistance to overcome and learning that has to take place.

Libraries were quick to jump into the world of the Internet. By the year 2000 only a tiny percentage of public libraries in the United States (4.3%) did not have an Internet connection, with 94.5% providing public access. The number of public access workstations and the speed of connection have also increased (Bertot & McClure, 2000). These are important numbers when one considers that home ownership of computers and Internet access from home are reported at a much lower percentage. According to the United States Bureau of Statistics, in 2001 50.5% of American households had Internet access (Infoplease.com, 2003). In Canada, Statistics Canada shows that in 2001 73% of households had someone who went online from home at least once a day (Statistics Canada, 2002, 2003). When broken down by area, income, ethnic origin, and other factors, the numbers in both countries vary, but even this average across categories shows that the public library remains an important agent in providing such access.

When the figures are broken down by age, we learn that in the United States 37.1% of those 50 and older made use of the Internet in 2001, compared to 63.9% of 25-49 year-olds, 65% of 18-24 year-olds, and 68.6% of 9-17 year-olds. The National Telecommunications and Information Administration (NTIA) also reports that, though Internet access for those over 49 is growing, people in this age group remain the least likely to be Internet users, especially if they are out of the labour force (NTIA, 2000). Fox (2000) informs us that while older adults comprise 13% of the U.S. population, they make up only 4% of Internet users. Most do not use computers and also feel that they are not missing anything. A digital divide remains for older adults.

## **1. THE LITERATURE**

There are many people interested in studying and reporting aspects of the information world of older adults. Morrell (2002) reports studies which show that older adults use the web for email, checking weather reports, locating special offers and shopping, reading newspapers, accessing travel and health information, and lifelong learning. An Internet audience measurement agency

which serves business ranks 45 online activities as of 2001 and concludes that those 55 and over primarily access the Internet for email, using search engines, participating in contests, gathering information about local events and places to go, sending electronic greeting cards, and researching products and services (Infoplease.com, 2003). With respect to these top six activities, older adults differed little from those in other age groups. They were more likely to check stocks online or to seek financial advice, and less likely to use chat services, listen to or download music, or do school-related research.

Both Marchant (1994) and an ALA-Gallup Survey (1998) show that older adults use the library less than younger people. Those who do go to the library often experience difficulty in using technology. Sit (1998) and Larkin-Lieffers (2000) found this to be the case when it came to use of the OPAC. Mabry (1995) suggested that librarians need to learn more about and increase their contacts with older adults in an effort to understand their information needs. Van Fleet (1995) warns that librarians need to watch that they do not fall into the trap of serving only the minority of older adults who have disabilities. My own studies (Wicks, 1999, 2001) show that it is difficult to talk about seniors as a group. Differences exist within the older adult population with the "younger-old" and those living independently (that is, not in assisted living) being more likely to own and use computers.

Much of the literature regarding older adults concerns programming for this population (see Naurital, 1985 for history on early programs for this age group). Some of that programming involves computer training, as Puacz and Bradford (2000) illustrate. In their Indiana example they observed that older adults expressed a desire for such training but were slow to sign up. Blake (1999) examined the literature on Internet issues and older adults. Grodsky and Gilbert (1998) reviewed computer training programs being offered in public libraries, retirement communities, and schools. Cody et. al (1999) observed a few years ago that seniors would take such training but then be without a home computer or ongoing technological support.

## **2. THREE STUDIES: METHODOLOGY**

In this paper the findings of three studies pertaining to the digital divide and older adults are reviewed and discussed. Findings are then compared to results of two interview-based research projects carried out by the author.

Three graduate students in the M.L.I.S. programme at Kent State University (Elizabeth Bringman, 2000; Joan Schlichting, 2000; and Robert Silkett, Jr., 2002) researched and wrote papers on older adults and the Internet, focusing respectively on use of the web, Internet awareness, and public library assistance programs in online services.

Bringman distributed a two-page multiple-choice questionnaire to seniors who went to senior centres in northeast Ohio. These centres were equipped to assist older adults with computer usage and access to online services. Fifty questionnaires out of the 210 distributed were returned. The questions gathered demographic information about the participants and, among other things, asked the following:

- How often do you use computers?
- Do you use computers to access the World Wide Web?
- Are you familiar with the various web sites which provide information for seniors?
- Which of the following web sites have you accessed? (SeniorNet, Age Net, Eldernet, AARP). How would you rank these sites?
- For what reason do you visit these sites?
- Do you see yourself, in the future, searching the web for information regarding travel\_\_, health\_\_, finance\_\_, government policy\_\_, and/or retirement\_\_?
- What is your overall impression of information available on the WWW? (confusing, exciting, useful, no opinion)

The second study (Schlichting, 2000) was interview-based. Though her main interest was in reading habits and in library use, Schlichting also interviewed the twelve participants living in two retirement homes about their computer use. Among other things, she asked

- Do you own a computer
- For what purpose do you use it?

She also collected demographic data.

Using a case-study method, Silkett (2002) targeted three public libraries in Ohio which are located in areas known to have large populations or concentrations of seniors. To find out what types of programming in online access for seniors were offered in these libraries or systems, he interviewed six administrators, two at each site. Samples of the questions he asked follow:

- What types of programs have you developed for older adults?
- Why was a specific program developed? What specific needs did it address?
- How was it funded?
- What resources were used to conduct this programme?
- Where was it held? (onsite, offsite) How was it publicized?
- What was covered? How was the programme evaluated? Has it continued?

### **3. THREE STUDIES: FINDINGS**

#### **3.1 Study #1**

In Bringman's study, the age of the fifty participants ranged from the 50s to the 80s, with most being in their 60s (40%) or 70s (48%). The majority (27 or 54%) had only a high school education, with 15 (30%) having completed a bachelor's degree, 6 (12%) a master's, and 1 (2%) a doctorate. Fifteen of the participants (30%) had no computer experience prior to visiting the senior centre, 24 (48%) were somewhat familiar with computers, and 10 (20%) were very familiar with them. Of 38 who answered a question about whether they used the centre's computers when they visited, 20 (50%) used computers every visit, 10 (24%) used them once in

a while, and 8 (19%) never. For those who used computers, 24 (68%) said they accessed the World Wide Web.

Bringman then went on to inquire about participants' use of web sites which are specifically targeted at seniors. Seventeen (55%) said they were familiar with such web sites. Of the four specific sites Bringman's survey identified, the most popular was SeniorNet, a site which provided information on computer use, offered support through online discussion groups, and identified access points to topics such as web searching, politics, and memoir writing. AARP (American Association for Retired Persons), Eldernet (for news and lifestyle themes), and AgeNet (an information and referral source for health, financial, and legal products and services), in that order, were next in preference. When asked which of these four sites was most relevant to their information needs, SeniorNet again emerged the leading site, with 55% saying it was "most relevant" and 32% saying it was "next most" relevant. In this case, the AARP site, AgeNet, and ElderNet, respectively, followed in relevancy ranking. When the participants were asked to identify their current and future information needs, as represented by the web sites they visited, travel or recreation needs and health information needs ranked highest in their thinking, followed by the need for information about financial matters, retirement issues, and government policy. Almost all who answered (96%) indicated an interest in making future visits to the Web sites identified in this study.

Overall, 50% of participants found the Web "useful", 20% found it "exciting", 9% saw the Web as "confusing", and 13% had no opinion. Comments added to the survey indicated that many went to computers in lieu of sufficient up-to-date information in traditional print media. Others sensed social pressure to keep up to current technologies lest they be left out of family discussions. Most felt that using the WWW was time consuming and that it did not provide adequate information of interest to seniors.

Bringman observed differences in computer and Web use according to the age of the user. Those in their fifties tended to have an undergraduate degree, were somewhat familiar with computers, and considered the WWW exciting and useful. Those sixty to sixty-nine, for the most part, had a high-school education, were somewhat familiar with computers, and found the WWW useful. Most persons who were in their seventies, also had a high-school education, though significant numbers also had bachelor's and master's degrees. They found the Web useful, and, indeed, believed that the information on the Web was the most truthful and up-to-date information available. People in the 70-79 category were more familiar with Web sites for senior citizens than those in the other age ranges. Only two participants were eighty or older, one with a high school diploma and one with a master's degree. They rarely visited the seniors centre and were only somewhat familiar with computers. One used the centre's computers every visit and found the Web exciting, while the other individual found it confusing.

A summary of the usage of the World Wide Web by seniors who participated in this study is found in Table 1. This table highlights the similarities and differences among participants in Bringman's study. The two people in their 80s are included with the 70 year-olds.

**Table 1**  
**Seniors and Their Use of the WWW: Similarities & Differences by Age**

	50-59	60-69	70+
<b>Education:</b> Bachelor's	x		
Master's		x	x
<b>Frequency of Visits to Centres:</b> Once per week	x	x	x
Once per month	x	x	x
Rarely visit	x	x	x
First visit		x	x
<b>Familiarity with Computers:</b> Not at all	x	x	x
Somewhat	x	x	x
Very Familiar		x	x
<b>Computer Use at Centres:</b> Every visit	x	x	x
<b>Use of Computers to access WWW:</b> Yes	x	x	x
No		x	x
<b>Familiarity with Web Sites for Seniors:</b> Yes	x		x
No		x	
<b>Preferred Web Sites:</b> SeniorNet	x	x	x
AARP	x	x	x
<b>Current Information needs:</b> Recreation/Travel	x	x	x
Finance		x	x
Health	x	x	x
Government Policy		x	
<b>Future Information Needs:</b> Recreation/Travel	x	x	x
Finance		x	
Health	x	x	x
Government Policy		x	x
Retirement	x	x	x
<b>Opinion of the WWW:</b> Useful	x	x	x

### 3.2 Study #2

Computer ownership and use were covered only incidentally in Schlichting's study. Her purpose was to determine the reading habits, library use, and Internet awareness of residents at two retirement communities located in north-east Ohio. She interviewed twelve residents aged 81 to 98. She estimated that more than half had at least some college training. Half had worked in professional occupations (nursing, librarianship, teaching, research, computer programming), a third described themselves as homemakers, and 17% had been employed in clerical positions. Nine of the 12 said they had computer access when, in fact, all twelve had such access at least through their residence library. At least eight were aware they had a computer and Internet access available but were not interested. One said she could have her family send email for her if she wished. Another refused an offer from her daughter to provide a computer for her. Another stated that sight problems were the reason she did not use the computer. The person who had worked as a computer programmer had both a laptop and a desktop with Internet connection in his room.

For those who did use computers, eight uses were identified, as follows:

- sending and receiving email
- doing word processing
- searching the Internet
- using computer music software
- playing computer games
- checking an investment portfolio
- reading the *New York Times* headlines
- using a reference database

Schlichting concluded that those who wanted to make use of computers could find a way to do so, but that there was a lack of interest on the part of those who had not previously used computers.

### 3.3 Study #3

Silkett was interested in examining the availability of programming in online use for older adults. Three library systems were studied. In one, a county system with nine branches and over 40,000 borrowers, public access to the Internet was made available in 1996. Three library administrators participated in the interview. They reported that computer classes for patrons were offered shortly after the introduction of Internet access and, over time, older adults became the focus of such training. A mix of ages has remained, with some older adults sometimes bringing grandchildren for added support. The emphasis was on how to use email and the Internet. Four to six classes are offered each month and 20% of attendants repeat the class. Handouts are considered important for older adults, classes are kept small (six people), and hands-on experience is well-received. There is usually a waiting list for the next class, an indicator of sustained interest.

A second library system has a main library and six branches, serves small towns, and has nearly 22,000 borrowers. The Director of this system said that little had been done for older adults in

the way of programming but that there were plans to begin a program in gaining better skills using online services. Some needs assessment had been done which indicated a strong interest in some kind of computer training. Staff members in the branch libraries feel there is a need and that new patrons will be attracted by such classes. Through assistance of the Gates Foundation, 33 new computers were purchased in 2001 and the network infrastructure was expanded. It was anticipated that older adults would benefit by learning how to seek additional sources of information, gain access to information which is increasingly available on the web in lieu of paper, and be enabled to keep contact with family via email.

The third library system served a metropolitan area, had 28 branches and over 516,000 borrowers. Two supervisors were interviewed. They explained that this large library system has a focused set of programmes for seniors, with a dedicated website and access to adaptive technology for users with impairments. In May of each year the Library promotes events and services for older adults. Computer training classes began in 2000 and class sizes are limited to 10 people. These classes cover a wide range of topics, among them usage of particular software programmes like Word or PowerPoint, subject specific topics (like genealogy or travel), Internet basics, and email basics. Content is usually the same across age groups, but sessions for seniors are paced differently. Classes may be offered for seniors but others may attend, and sometimes that means the senior brings a younger family member for support. Seniors also often attend classes not specifically promoted as for their age group. Classes have been heavily promoted through older adult organizations and continue to be well-attended. Besides the mechanics of working with a computer and on Internet searching, the instructors also teach evaluation of web sources. The interviewees had observed a wide range of ages from 55 to 80 at the classes. The participants come to learn email so they can keep in touch with family, to satisfy curiosity about the Internet, and to get help in performing their volunteer activities. Most did not have a computer at home when they began the training session and used the training to test their interest. Some smaller and less-frequently-offered computer training is offered at branches.

#### **4. CONCLUSIONS**

Though this discussion has concerned three different studies, each with its own unique questions to ask, there are nonetheless some common elements. The Bringman and Silkett investigations covered from the young old to the oldest old. Bringman found that three-quarters of respondents to her survey used computers when they went to the senior centres. It was reported to Silkett that in the library systems being studied there was considerable interest among older adults in computer training. A minority, however, remains uninterested in this medium (19% in study #1 never used the senior centre computers; three of 12 in study #2 had no access and at least that many did not care).

For those with interest, the uses and topics of most interest were email and web searching (studies #2 and 3), and sources for travel or recreation information (studies #1 and 3). The author studied the information seeking behaviour of older adults in 1999 and 2001 projects. The most popular uses of computers, according to my 2001 study were for email and word processing. The attraction of email has been noted in the Schlichting and Silkett papers as well. The literature discussed earlier confirms this finding. Morrell (2002) found that checking email and searching



for, among other things, travel and health information, was what most interested seniors about the Internet. Email also ranked high in the surveys reported by Infoplease.com (2003).

In my 1999 study, I discovered that only one of the fifteen interviewees had Internet access. These participants were, for the most part, among the “oldest old” and they lived in an institutionalized setting. On average, participants in my second study (2001) were ten years younger. They also lived independently, had enjoyed a higher level of education than those in the earlier group, and had been white collar workers before retirement. Three-quarters also owned a computer. I concluded that age, education, and job-type differences may contribute to a digital divide and that it is important when discussing older adults and the role of computers and the Internet in their information worlds to distinguish between different stages of older age. In the Bringman survey a clear divide along these lines was not observed. The 19% who did not use centre computers were distributed among the various age groups (50s= 2%, 60s= 10%, 70s=5%, 80s=2%). Yet, bringman did find some differences between age categories in computer use and preferences (as Table 1 reports). More research is needed into the characteristics and reality of a digital divide along lines of age, education, and employment type.

The Silkett paper suggested that there is a market among older adults for public library computer and Internet training courses. Puacz and Bradford (2000) also observed such a demand, but also found that often the expressed desire for such training did not materialize in attendance when sessions were announced. Silkett’s research, two years’ later, showed consistent demand and even waiting lists.

Discussions of a potential digital divide between older adults and younger age groups in this area require us to consider questions of both access and literacy. Almost all public libraries have made Internet access available to their communities and have increased connection speed. One librarian in Silkett’s study observed that the library was sometimes used as a testing ground with graduates of Internet training then going out to purchase their own systems. The presence of both the equipment and the training, then, can be seen as means to lessen the digital divide, for citizens of all ages and not just seniors. Information literacy was seen in the same study as a way to enable those outside the Internet loop to close the gap of the computer “have-nots” with the computer “haves”.

Some final summary points can be made in the light of the studies reported in this paper:

- At a time when more and more information is being made available online, sometimes without comparable print sources (for example, much government information), some seniors remain resistant to the use of new technologies. For these people the digital divide may be widening.
- For older adults adaptive devices may be necessary to allow use of computer and Internet sources.
- Public libraries have narrowed the divide by making great strides in providing community access *and* literacy training. Some of that training has been successfully aimed specifically at older adults.
- It is possible to identify common information interests among the older adult population (for example, email, travel, health).

- The question of how much variables such as age or education tend to influence the digital divide remains open to investigation and debate. These variables should be studied both within the senior population and outside it in order to understand how seniors are similar to or different from other groups who may be at a disadvantage in the digital age (for example, minorities, the poor, the less-educated of all ages).

A problem with comparing the findings from a variety of studies is that each has a different purpose and emphasis. Different variables are of interest to different investigators. In some cases data, which would allow for interesting comparisons, are not collected. Only partial comparisons and tentative conclusions can be drawn. Yet the more that research is carried out and reported, the more that certain themes and trends to be observed. Thus, collecting the findings from a variety of reports on different aspects of older adults and their access and use of digital resources benefits information providers and policy makers.

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