The number of older adults in the United States is increasing rapidly and will continue to increase as the baby boom generation ages. While contemporary society is becoming increasingly reliant on computers (for convenience, "computers" as used in this article includes the Internet and related applications such as e-mail and e-government), older adults' adoption of this technology lags significantly behind that of younger people. To narrow the generational digital divide, computer training programs have been developed that aim at helping older adults—roughly age fifty-five and older—overcome difficulties in computer learning and use. One of the primary sources of computer training for older adults is the public library, which has become a social leader in providing such training.

Public libraries are an ideal site for providing computer access and training for older adults with both formal (i.e., skills acquisition) and informal (i.e., improved sense of well-being) benefits. First, the explicit mission of public libraries is to meet the information and learning needs of patrons. Second, public libraries have
the necessary infrastructure in place, as virtually every public library in the United States has computers and Internet access available for patrons to use. Third, public libraries are located in a large number of communities, with locations often accessible by public transportation. Fourth, public libraries are one of the few publicly available spaces where older adults with disabilities can reach accessible technologies. Finally, public libraries have a long tradition of meeting information needs of older adults. In short, it makes sense that public libraries employ their existing strengths and resources to help older adults acquire the necessary skills and knowledge to connect to twenty-first-century sources of information that will support and enrich their daily lives.

According to public libraries, training to use computers and the Internet is one of the largest impacts of libraries on their communities. In nearly 40 percent of public libraries, training is available whenever patrons request it, while many libraries schedule weekly or monthly training classes. Among libraries that offer computer training for patrons, the most common types of training include providing information literacy and general technology skills, helping students with school assignments, and offering technology training opportunities to those who would not otherwise have any. Other types of computer training focus primarily on the use of e-mail, health databases, and genealogy databases, as well as special types of training targeted primarily at older adults. Older adults are the most frequent target audience for computer training in public libraries, with 57.3 percent of libraries that offer training targeting this age group.

In 2004, 31 percent of library systems reported they were unable to provide information technology (IT) training to patrons; by 2006, that number had dropped to 21 percent, suggesting that the amount of training in IT had increased significantly during this time period. While nearly 80 percent of American public libraries provide some amount of Internet-related training for patrons, many of these programs do not offer classes or content specifically designed to meet the needs of older adults, particularly ongoing training courses. The lack of financial resources, sufficient space, or an adequate number of staff to provide training are leading concerns in these libraries. In fact, not offering patron training may be strongly linked to lacking the economic resources to do so. Public libraries that do not offer computer training are frequently libraries that rely on the federal E-rate funding program for Internet access. Further, usage of e-government websites for activities like enrolling in Medicare or filing taxes, while extremely important to older adults, is not often emphasized in computer training, in spite of the fact that many citizens rely on public libraries as their access point to e-government.

Efforts have been made to develop guidelines that may help improve the effectiveness of computer training programs for older adults, including such programs in public libraries. Existing guidelines, however, are typically based on untested assumptions that computer training for older adults is a limited process that mainly focuses on the technical and online aspects of computer use (e.g., communicating with children and grandchildren via e-mail or seeking information on the Web). Although these aspects have obvious advantages, especially for homebound older adults, focusing on them alone ignores the fact that computer learning for older adults is typically a continuing process that takes place in an offline and social environment. Furthermore, existing guidelines often predominantly focus on evaluating the direct effects of computer training (i.e., skill acquisition) while underemphasizing the more indirect—but by no means less important—effects of computer training on older adults (i.e., personal well-being).

This article argues that, in addition to the formal, technical, and online aspects, computer training programs for older adults should also pay attention to and make use of—the informal, continuing, offline, and social aspects of computer learning and use. Public libraries, many of which already offer face-to-face computer training, are ideally situated to be an environment that fosters both the formal and informal aspects of computer training for older adults. By taking into consideration all of these relevant and important aspects, this more balanced approach may help achieve not only the direct goal—to improve the effectiveness of computer training programs for older adults—but also the indirect goal—to improve well-being in later life.

Learning to Use Computers through a Continuing Process

Currently, there is no empirical research on how long a computer training program for older adults should last in order to maximize both the short- and long-term effects of training. Existing training programs (including those in public libraries) can be as short as a few hours or as long as fifteen months. By design, older computer learners are usually left on their own after the training programs are completed. This conventional approach implies—and some
programs even have an explicit, built-in goal—that after a relatively short period of training, older adults should be able to use computers independently. One reason for providing computer training programs of limited duration might be that it is difficult to get unlimited financial and human resources to facilitate older adults' learning and use of computers. As noted above, financial, staffing, and special constraints are the primary limitations on the availability and the length of computer training programs in many public libraries. Another possible reason, however, is that there is a relative lack of recognition that short-term training programs cannot provide (much-needed) long-term technical assistance for older adults.

Providing limited computer training and assistance for older adults, however, is inconsistent with existing research findings. Human-factors research has generated rich evidence that, due to age-related changes in visual, perceptual, psychomotor, and cognitive abilities, older computer learners usually make more errors than their younger counterparts when performing computer tasks and require more time, practice, and technical assistance to acquire computer skills. Lack of prior experience/knowledge and age-appropriate computer training and support have consistently been reported as some of the biggest obstacles to older adults' learning and use of computers.

A major criterion for the success of a computer training program for older adults is the extent to which the benefits of the training can be maintained after the training is completed. Research indicates that it is crucial to provide continuing technical support to older adults to improve the effectiveness of training in both the short and long run. To do so, one possible strategy is to provide long-term computer training and support for older adults at facilities they frequently visit or communities in which they live. This idea could be applied to public library computer training by creating continuing computer learning opportunities. In consideration of the limited financial and staff resources public libraries often face, library administrators could encourage and facilitate older adults to organize their own computer interest groups or computer clubs—which may last for years—so that these older adults could learn from one another during a prolonged period of time.

Prolonged and active participation in peer-led computer clubs is key to these older adults' effective computer learning and use. Older adults are enthusiastic about organizing and participating in computer clubs on a regular basis and prefer to learn about computers from age peers instead of young people. In fact, while taking a computer class at one public library, older adults voluntarily started helping each other learn about computers.

Learning from age peers may also help empower, rather than disempower, older computer learners. If computer training programs can have a built-in mechanism that allows and encourages older adults to learn from each other, then older computer learners may be better able to develop a sense of empowerment, which is essential to well-being. As Van Fleet and Antell suggest to public librarians providing computer training to older adults, "the instructor's role should be that of coach, facilitator, or mentor." By promoting continuing learning and informal technical support, the intent is not to devalue the more formal training provided by instructors, as the formal training has been shown to be beneficial to older computer learners. In particular, research shows that initial senior-friendly computer training has a positive impact on older adults' attitudes toward computers and that success at initial training (measured by the number of successfully completed tasks) strongly predicts older adults' continued use of computer systems. The argument here is that to optimize the effectiveness of computer training for older adults (and to improve older learners' well-being in the long run), it is important to take a more balanced approach that combines the two components: while the relatively short cycle of initial formal computer training (e.g., computer classes) can be the beginning of older adults' learning and use of computers, the long-lasting, informal setting (e.g., computer clubs) can provide continuous practice and support that go beyond the initial formal training.

Computers, Social Environments, and Personal Well-Being

There is a general consensus in the literature that computers have the potential to improve individuals' communication and access to information. However, this view predominantly, if not exclusively, focuses on how computers can facilitate older adults' communication and interaction in the online world. Influenced by this general view, existing computer training programs usually focus on if and how older learners can use the computer to communicate and seek information online while ignoring the offline aspect of such training. In other words, the potential benefits of the online world are so powerful that they often overshadow other benefits, including the learning activity itself as well as personal interactions with
others during the learning process that may result in individual well-being.

For older adults, the continuing process of learning to use computers typically takes place in the physical world. As a natural result of the face-to-face computer training and learning process, older learners have opportunities to interact and socialize with other older learners and the trainer(s) in the offline world. In fact, the Internet can help create and maintain meaningful online and offline social relationships.\(^3\) There is empirical evidence that social interactions that occur during the computer training and learning process may have at least partly contributed to the reported positive association between computer use and well-being.\(^3\) These findings suggest that, when considering the impact of computer learning and use on older adults' well-being, it is important to look beyond the online and technical aspects and pay serious attention to the offline and social aspects of technology learning and use.

If improving older adults' well-being is the indirect (but essential) goal of teaching them computer skills, then it is crucial to make good use of the face-to-face social aspects involved in the continuous process of such training. In other words, it is important for researchers and trainers to realize that a result of computer training and continuous support for older adults will be social interactions and friendship formation. A more balanced approach that pays equal attention to the technical and social and online and offline aspects of computer learning and use can improve not only the effectiveness of the training but also the well-being of older adults.

Public libraries are ideally positioned to provide a computer training environment that fosters both formal and informal education. As a result of their historical promotion of information access for all, public libraries are a socially trusted source of information as well as a forum for the exchange of ideas.\(^36\) Trust of public libraries is strongly tied to the help that librarians provide to patrons as they seek information.\(^37\) In specific terms of computers and the Internet, the public library “is a trusted community-based entity to which individuals turn for help in their online activities—even if they have computers and Internet access at home or elsewhere.”\(^38\) Ultimately, “public libraries seem almost immune to the distrust that is associated with so many other institutions.”\(^39\) As a result of this social trust, older adults will likely be comfortable in the public library as a place to engage in both the formal and informal, educational and social aspects of learning to use computers.

Along with being a socially trusted environment for learning, public libraries also have the advantage of being staffed by information professionals to provide the training. As public librarians are educated to teach others how to use information—and many are already teaching patrons how to use computers—they would be very well suited to serving as facilitators of an ongoing process of formal and informal computer training for older adults. Additional resources would be needed for public libraries to serve in these roles, but they certainly already have the human and technological capacities to do so.

The trusted nature of public libraries will also help to promote a sense of well-being in the computer training. Although a causal relationship between existing computer training/use and older adults' well-being has not yet been definitely established, there is evidence that computer training/use is positively associated with older adults’ well-being.\(^40\) Of particular importance to research on older adults' computer training/use and well-being is the psychological well-being (PWB) concept as developed by Ryff, which argues that PWB includes six dimensions: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth.\(^41\) This concept has a unique emphasis on human potential in that it “entails perception of engagement with existential challenges of life.”\(^42\) Learning to use computers in a social setting such as a public library offers important opportunities to reinforce a sense of well-being in older adults. For example, participants in one study of older adults and computer training organized a computer interest group and started publishing a newsletter for the community by using the computer skills they learned from the training program, suggesting an increased level of social connectedness and community engagement.\(^43\) In fact, learning to use computers—in a social and supportive environment—is positively associated with all six dimensions of PWB.\(^44\)

**Facilitating Computer Training for Older Adults in Public Libraries**

Building on several related but distinct literatures, including older adults' computer training/learning and use, social interactions and friendship in later life, and well-being, we argue that—in order to better accommodate age-related changes that prohibit older adults' effective learning and use—computer education for older adults should be a continuous process rather than one that lasts for only a limited period of time. In consideration of both the limited
resources available to provide continuous training and support for older adults and empowering older computer learners, this continuous educational process may include both formal and informal training. While formal training (e.g., computer classes or training programs designed and provided by researchers and trainers) can serve as the beginning of older adults’ computer learning and use, informal training (e.g., computer interest groups or computer clubs in which older adults can help and learn from one another) can provide older computer learners with much needed long-term technical assistance.

Computer training programs for older adults should aim not only at the direct goal of skill acquisition but also the indirect but essential goal of improved well-being. This requires a fuller understanding and measuring of the well-being concept, which includes multiple aspects that go beyond a focus on depression or loneliness. In light of this more balanced approach, when evaluating the success (or failure) of a computer training program, it is important to measure the direct and indirect, technical and social, and online and offline effects of computer training on all aspects of well-being, especially previously understudied or ignored aspects such as personal growth and empowerment.

Based on these key ideas, specific issues that public libraries should consider in working toward providing more comprehensive computer training for older adults include:

- **Restructuring computer training**—Often computer training in public libraries is designed as a single course or only available sporadically. Older adults will most benefit from courses that meet on a regular basis and provide continual education and social interaction to improve overall well-being.
- **Stressing informal aspects**—Computer training not only has to emphasize the formal how-to elements of computers and the Web, but also the informal, social aspects that will serve to empower older adults. These informal aspects can be fostered by many of the social activities that public libraries already provide to add face-to-face dimensions to the computer training programs and foster a sense of community among the participants.
- **Focusing on more than online communication (such as e-mail)**—As more government services move online, and then exclusively online, the ability to use computers and the Internet will become a vital and unavoidable link between citizens and the government. Along with highlighting social aspects of computers, to truly empower older adults as citizens, training must also place greater emphasis on using e-government services, such as Medicare sign-up and tax filing.
- **Attaining external support**—While the vast majority of public libraries already have the technological infrastructure and knowledgeable staff, providing more computer training to older adults will require more resources devoted to such training in terms of staff time, technology expenses, and perhaps even space within the building. Searching for external support from government agencies and private foundations for these types of activities will be extremely important. Building relationships with other community organizations that serve older adults (e.g., senior centers, local AARP chapters, and Administration on Aging) may also provide support.
- **Identifying and sharing best practices**—As public libraries consider implementing these types of computer training programs, it will be important for them to share best practices and innovative approaches with one another.45 State library agencies and library consortia may be able to facilitate this.
- **Increasing awareness of training availability and potential benefits**—Developing these kinds of training programs would be of little value if older adults did not become involved in them. Raising awareness of these programs and the potential benefits they could convey to older adults in terms of information seeking and personal well-being will be essential. It will be necessary to find ways of reaching both users and non-users of the public library. Teaming with other community organizations that work with older adults may prove a fruitful approach.

As these types of programs are implemented, public libraries might also want to consider encouraging library and information science (LIS) programs to make the information needs of older adults and computer training larger elements of LIS degrees for future public librarians. At the College of Information Studies of the University of Maryland, for example, there is a new sub-concentration on lifelong access to and use of information, which is a built-in component of the LIS master's program. Courses are offered that directly address the intersection of older adults, information, and technology.
Conclusions and Considerations for Further Research
Public libraries, in their role as providers of equal information access for all citizens, must work to ensure that the computer training they provide meets the formal and informal needs of older adults. The trust that patrons have for public libraries, the ability of librarians to provide assistance, and the atmosphere of information access and exchange fostered within libraries combine to make them an ideal environment in which to provide computer training programs that focus on both the educational and social aspects of computer training for older adults. The interactive nature of public libraries might also encourage computer-savvy older adults to take leadership roles in helping others in the training programs.

To fully understand the most appropriate types of computer training programs for older adults in public libraries, future research is needed to provide

- a clearer picture of types of such programs currently conducted by public libraries,
- the best practices in computer training for older adults,
- means for fostering both formal and informal computer education, and
- the best methods to encourage the participation of older adults in these training programs.

The related studies and findings from gerontology, human-factors research, and other streams of research have much to offer public library research into computer training for older adults. Ultimately, the confluence of the growing number of older adults, the expanding importance of the Web in information and communication, and the social expectations that public libraries will meet the information needs of patrons demonstrates that computer training of older adults will become a major issue for public libraries and public library researchers. Research and training should bring greater focus to this area to ensure that libraries can meet these information needs and social expectations.

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New National Poll Shows Library Card Registration Reaches Historic High

As Americans deal with a slumping economy, U.S. libraries are experiencing a dramatic increase in library card registration. According to a new Harris Poll from Harris Interactive, released September 22 during Library Card Sign-Up Month, 68 percent of Americans have a library card, up 5 percent since 2006. Survey results indicate that this is the greatest number of Americans with library cards since the American Library Association (ALA) started to measure library card usage in 1990.

In-person visits also are up 10 percent compared with a 2006 ALA household survey. Seventy-six percent of Americans visited their local public library in the past year, compared with 65.7 percent two years ago. Online visits to libraries are up even more substantially—with 41 percent of library card holders visiting their library websites in the past year, compared with 23.6 percent in 2006. The poll also found that 39 percent of cardholders visit the library to borrow books from the library; 12 percent take out CDs, videos, or computer software; 10 percent use a computer to see what the library has available; 9 percent use reference materials; and 8 percent go to the library for Internet access.

The Harris Poll is a non-commissioned survey that was conducted online within the United States between August 11-17, 2008, among 2,710 adults (age 18 and over). The full research method is available at www.harrisinteractive.com.