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Older adults and e-learning: Opportunities and Barriers

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Abstract

E-learning and distance education can play a role in helping older adults become integrated with the rest of society. As demographic and cultural changes affect the place of older adults in society, online learning programs become increasingly appealing to older adults. In this paper, I discuss (1) the changing notion of work and learning in older adulthood, (2) the myths about older adults' use of technology, (3) the types of e-learning programs for older adults (i.e., programs for personal growth and social change, workforce development, and workplace learning), and (4) the barriers to older adults' full participation in e-learning.

In Western nations, demographic shifts are resulting in a major reassessment of our countries' policies and practices toward older adults. Oftentimes, older adults are leading the discussion by questioning government policies toward work after "retirement," critiquing employer policies toward hiring older adults, resisting traditional "busywork" volunteer assignments, and insisting on new and different educational opportunities. As older adults become integrated with the rest of society, e-learning use among older adults will steadily increase. In this paper, I discuss (1) the changing notion of work and learning in older adulthood, (2) the myths about older adults' use of technology, (3) the types of e-learning programs for older adults, and (4) the barriers to older adults' full participation in e-learning. My goal is to focus on the possibilities of taking deliberative, collaborative action to include older adults in educational and work opportunities.

The Changing Notion of "Retirement"

The modern concept of retirement (i.e., a complete separation from work) originates in the Industrial Revolution and the start of modern retirement programs like Social Security (Dychtwald, 2005). As life expectancies have increased, the number of years in retirement has expanded dramatically. Due to increased life expectancies, older workers increasingly value the social, psychological, and financial benefits of continued employment, whether it be paid, unpaid, full-time, part-time, flexible, or temporary (Hale, 1990; Stein, Rocco, & Goldenetz, 2000). At the same time, organizations are dealing with declining numbers of available workers and a need for seasoned, experienced talent (e.g., see Ennis-Cole & Allen, 1998; McNaught & Barth, 1992). Both of these factors, in addition to other societal and economic shifts, contribute to the increasingly prominent idea that "retirement" is an outdated concept (Stein & Rocco, 2001).

Dychtwald (2005) found that 80% of baby boomers plan to be "working retirees." Baby boomers produced massive social change during their earlier life phases and we can expect that

this group's independent, non-traditional attitude will continue as they age (Chaffin & Harlow, 2005). This independent spirit will undoubtedly result in transforming our current notions about what it means to be retried.

One key area of transformation is the trend toward more flexibility in paid positions, volunteer assignments, and educational opportunities. Flexibility is often the key for older adults. Jobs that allow telecommuting have become especially conducive to older workers. ARO, a Kansas City business process outsourcer, has had success in employing older employees as stay-at-home call center representatives (Dychtwald, Erickson, & Morison, 2004). Many of ARO's callers (customers of insurance and financial services companies) preferred speaking with someone older. The older employees' life experience enabled them to relate better to the callers' situations, given the issues dealt with in the insurance and financial services industries. In another setting, a long-term examination of Days Inns of America's reservation call center found that older employees spent a longer amount of time on the phone with customers. The older workers' calls resulted in a higher percentage of reservations than the younger workers' calls (McNaught & Barth, 1992). Days Inns was one of the early pioneers in recruiting older workers. When companies experiment with new work arrangements like these, substantial benefits can result. Older workers benefit from having a job in an environment that is conducive to their needs while the employer benefits from having experienced workers. Days Inns says their outreach to older workers was solely a business decision to meet their staffing requirements, not an altruistic effort. Regardless of the motives, both the employers and older workers can benefit.

Phases of Older Adulthood

"Older adulthood" can span several decades. Within these decades, great changes take place based on chronological age, as well as mental, physical, and emotional health. Nichols (2001) presents six case studies in order to address how employers can meet the needs of older workers. The case studies illustrate the heterogeneity of older workers—from a woman who was actively advancing in her career to a man who wanted part-time work to keep busy. In Nichols' cases, the individuals were very diverse. Among them, there were differences in physical health, aptitude with technology, and openness to organizational changes. When considering the learning process for older adults, it is crucial to remember that differences between older individuals are just as common as they are for those in younger generations (e.g., personality differences, class differences, educational differences). However, there are common phases through which many older adults progress: (1) continuing the same lifestyle as in middle-age, (2) revising lifestyles to accommodate changes that occur in older adulthood, and (3) becoming "dependent on others for some level of care" (Fisher & Wolf, 2000, p. 482). These phases are not necessarily linear and individuals may cycle through the various phases multiple times. For example, individuals may be dependent on others during illnesses, but return to their middle-age lifestyle once recovered. On the other hand, some people may progress through the stages in a linear manner. Individuals participate in educational opportunities in each of these phases. In each phase, learners have very different needs and interests.

Resistance to New Technology

One of the most damaging stereotypes of older adults is that they are rigid and do not want to learn. We often attribute rigidity to age rather than personality. As Nichols (2001) points out, rigidity "is less a factor of age than of personal history, pressure, and predisposition"

(p. 238). It is common to attribute negative traits to group membership (e.g., based on age, race, gender, disability, sexuality) rather than individual differences. We should recognize that attributing rigidity to age is just as damaging as attributing negative stereotypes to other groups.

In a statewide implementation of a new software system across multiple state agencies in Pennsylvania, Rizzuto and Mohammed (2005) found that older workers were not more resistant to change. In fact, they found that older employees had a greater willingness to learn the new technology than younger employees. Older workers were also less inclined to support technology implementation for instrumental reasons (e.g., career advancement) than younger workers. Although other research shows that older employees may not be as quick at learning new technology, the older workers were more supportive of the organizational initiative. Rizzuto contends that organizations should invest the extra time and money that it takes to train older workers because their commitment to learn is stronger (SeniorJournal.com, 2005). Rizzuto and Mohammed, as well as Morris and Venkatesh (2000), found that older workers' commitment to new technology is related to organizational and group norms. Therefore, Rizzuto and Mohammed suggest tapping into older workers' sense of loyalty to their coworkers and desire to help the organization's mission.

It is crucial to take extra steps to dispel myths that claim older adults (especially older women) are resistant to using computers and have great difficulty in using them (Taylor, Rose, & Wiyono, 2004). By working to eliminate commonly held stereotypes that older adults are more resistant to change, organizations can continue to benefit from the expertise of these individuals. When stereotypes are overcome, older workers' knowledge and skills can be optimized rather than ignored or suppressed (Nichols, 2001). Holding to the stereotypes is harmful to individuals, organizations, and society.

Older Adults Using Computers

A larger percentage of baby boomers are familiar with computers and the Internet than the previous generation. The Pew Internet and American Life Project found that 22% of Americans 65 and older use the Internet (up from 15% in 2000), in contrast to 58% of those age 56-64 (Fox, 2004). As those 56-64 continue aging, a much larger percent of the older adult population will be engaged in online activities. Many of the previous issues with older adults (e.g., needing to learn the basics of computers) will no longer be as big of an issue. However, education providers need to develop innovative solutions for reaching those less familiar with technology, such as poor and less educated older adults. Otherwise, these individuals will become further marginalized in our society (Timmermann, 1998).

One program helping to encourage access to technology among older adults is SeniorNet. SeniorNet was founded in 1986 to help older adults learn to use computers (Russell & Ginsburg, 1999). Today, SeniorNet is a network of community learning centers and an online community. Courses are taught by senior citizens, for senior citizens. According to SeniorNet's website, there are approximately 200 centers that teach older adults basic computer skills, how to use the Internet, genealogy research skills, and other computer-related skills. SeniorNet's online community offers discussion boards and online courses (courses range from Greek 101 to an introduction to using eBay to a training program on eVolunteering).

In a study of enthusiastic computer users who were part of a local SeniorNet center, White & Weatherall (2000) found that participants used computers because of their desire to be in touch with "modern life today." This finding corresponds to a large-scale random survey of the U.S. adult population that found an increase in the number of people who use the Internet

"because it's a good thing to do," when comparing survey results in 1995 with those in 2000 (Katz, Rice, & Aspden, 2001). To maintain their status as full members of society, these older adults felt a need to be active computer users. Also, these users valued technology for practical reasons—because it helped them facilitate existing goals (e.g., working on genealogy projects, communicating with family).

E-Learning Programs for Older Adults

As mentioned earlier, older adults participate in education opportunities in varying phases of older adulthood for multiple purposes. I have grouped e-learning programs for older adults into three broad categories: programs for personal growth and social change, workforce development, and workplace learning (see Table 1). Within all three of these categories, there are programs geared toward older adults specifically and programs that target the general population.

Table 1
Types of E-Learning Programs for Older Adults

	Purpose	Learning Providers
Programs for Personal Growth and Change	Foster opportunities for personal growth, civic engagement, and social action	- Community education programs - Universities of the Third Age (U3As) - Lifelong Learning Institutes - Community colleges/university outreach programs
Workforce Development Programs	Provide opportunities for work-related training/retraining and to provide life-planning courses/services	- Community colleges - Workforce development centers
Workplace Learning Programs	Facilitate work-related learning for employed workers and volunteers in non-profit organizations	- Employers - Sites of Volunteer Work (e.g., non-profit organizations, community action groups, religious organizations)

Programs for Personal Growth and Social Change

There is a long history of older adult education programs around the world. Universities of the Third Age (U3As) offer learning programs (not formal degrees) for older adults and are typically run by older adults. In the U.S., these programs are commonly called Institutes of Learning in Retirement, Lifelong Learning Institutes, or Elderhostel Institutes. Typically, the programs are for personal growth and development and are not connected to vocational pursuits (Kerka, 1999). In the U.S., community colleges also provide personal development programs in addition to traditional career-related programs. These personal development programs contribute to the overall wellness of older adults by helping them to continue to learn and remain actively engaged in society.

A wide body of literature illustrates the mental and physical benefits of adult education for older adults (Swindell, 2002). In addition to cognitive benefits attained directly from

education, the maintenance of social networks is also vital to mental health. Older adults have more difficulty maintaining these social networks with age due to the deaths of friends and the decreased ability to travel (in some cases). Online learning and online communication tools can increase the ability of older adults to maintain education activities and maintain social networks, even when physical mobility is hindered (Chaffin & Harlow, 2005; Swindell, 2002). In a study of online U3A courses, Swindell and Thompson (2000) found that most of the participants were *not* in geographically isolated areas. Instead, many of them served as caregivers or had health issues that made it difficult to commit to attending a face-to-face course. The online courses allowed them to continue participating in education and interacting with others.

Although some view older adult learning as entertainment or leisure activities, Fisher and Wolf (2000) emphasize the need to move beyond older adult learning for such purposes. They advocate an educational model that contributes to greater societal good through self-empowerment, self-control, and self-determination. This view seems especially appropriate for the baby boomers, given their long history of independence and political activism. The field of adult education has a long history of integrating education with social action (e.g., Ewert & Grace, 2000; Glowacki-Dudka & Helvie-Mason, 2004; Stein, 2006). By tapping into this spirit, distance learning programs for older adults can help to foster both personal growth, civic engagement, and social action among older adults.

Workforce Development Programs

Community colleges and other workforce development providers are increasingly being called upon to assist in workforce development efforts for "retiring" baby boomers (Butler & Maurer, 2005). Goggin and Ronan (2004) contend that community colleges must rethink their traditional approaches to education for older adults. For example, workforce development providers are finding an increased need for offering services and courses geared toward life planning (Butler & Maurer, 2005; Goggin & Ronan, 2004), in addition to their traditional role of providing retraining for those entering new careers. Life planning services are a new and different version of career development programs, which take a holistic approach instead of narrowly focusing on career options. Distance education programs can offer courses that provide these services by incorporating interpersonal interaction and dialogue, which would allow older adults to learn with and from each other. Baby boomers will demand flexible workforce development programs that allow them to maintain meaningful, active lifestyles (which will include paid jobs or volunteer work) while participating in these programs. E-learning provides one workforce development option for active older adults who are maintaining busy lives.

Workplace Learning Programs

In three related studies, the American Society for Training and Development found that e-learning is used for 27% to 38% of all formal learning programs in organizations (Sugrue & Rivera, 2005). Along with everyone else, older workers are being exposed to e-learning at work. Older workers use workplace e-learning through (1) their current jobs (i.e., keeping the same job they had before "retirement age"), (2) in new jobs, and (3) as volunteers in non-profit organizations. Decision makers cannot assume that older individuals are not interested in participating in e-learning opportunities merely because of their age. In our fast-paced and quickly changing environment, organizations need to encourage all workers to participate in learning and development opportunities.

Barriers to Full Participation by Older Adults

In e-learning programs for personal growth and social change, workforce development, and workplace learning, there are barriers that could hamper full participation by older adults. These barriers range from more difficult issues like negative stereotypes to issues that are easier to address, such as usability and interface design.

Negative Perceptions about Older Adults

Instructors, instructional designers, and managers in community-based organizations, workforce development programs, and workplaces are faced with the task of proactively educating others about the benefits of an inclusive attitude toward older workers (and the myths about them). In addition to the long-term consequences of stereotypes (i.e., affecting individuals' self-identities and hampering long-term organizational effectiveness), stereotypes can also effect immediate tangible changes in performance.

Levy (1996) provides an example of these immediate consequences through her experiments of memory recall with younger and older adults. Participants were subliminally exposed (i.e., using an experimental psychology apparatus) to positive stereotypes regarding older adults during one study and participants were subliminally exposed to negative stereotypes during another study. The studies found that the subliminal negative stereotypes significantly reduced memory performance in older adults, where positive stereotypes had a very positive effect on performance. There was no significant effect in the younger adults, presumably because these self-stereotypes (positive or negative) were not available to be activated in the younger adults. Some older adults' resistance to participating in training and education is due to the fear of displaying memory loss (Hale, 1990). This fear can develop into a self-fulfilling prophecy. Trainers and instructional designers should be aware of this deeply held fear. Both Levy's and Hale's findings illustrate the importance of (1) organizations working to eliminate stereotypes about older workers, (2) having an awareness of and appreciation for the strengths that older workers bring to workplaces, and (3) taking steps to avoid situations where older adults might be embarrassed about memory loss.

Another barrier involves the lack of training opportunities for older individuals in workplace settings. Training and development programs favor younger workers, according to the Bureau of Labor Statistics (Dychtwald et al., 2004). In addition to biases that cause managers to avoid "wasting money" on developing older workers, Dychtwald et al. contend that older employees may be less reluctant to admit that they need or want to participate in training activities. Peterson and Wendt (1995) report on a 1991 study that found that 80% of those over 50 years of age had not participated in an educational activity. Twenty-four percent of those individuals reported that they had not participated in an educational activity because their employers had not encouraged them to do so. Although future cohorts of older workers may be more assertive in seeking educational opportunities, the finding illustrates the importance of managers encouraging the ongoing development of older workers.

Class and Educational Barriers

Less educated individuals and those who work(ed) in blue collar jobs are less likely to participate in adult education programs (Swindell & Thompson, 2000). As mentioned earlier, education providers can develop innovative ways of reaching out to these individuals. However, Swindell and Thompson's study found that the underrepresented groups were better represented in the online courses than they were in face-to-face courses. They suggest that the online

medium may provide an opportunity for more privacy and safety—a suggestion also made in a qualitative study of an online professional development course (Githens, in press). More research is needed to know whether online courses provide a better entry point for members of underrepresented groups. Regardless, e-learning designers and planners should consider less educated groups when making design decisions (e.g., reading level required, level of technical and computer expertise needed, making less educated individuals feel safe and comfortable).

Technical Problems

Technical problems can be a recurring source of frustration for online students of all ages, especially for those less comfortable with computers. Even in volunteer-driven programs, like Universities of the Third Age (U3As), technical support guides need to be provided in order to help the technology be less obtrusive (Swindell & Thompson, 2000). In one U3A online course, an email listserv was used for class-wide conversations instead of an online discussion forum (Swindell, 2002). The listserv was better used than the discussion forums in other courses. Based on his findings, Swindell speculates that this easier-to-use technology may be more suitable for this audience. He suggests further follow-up tests of using listservs in other courses (since the particular course used may have just been more conducive to email). Generally, using the most familiar and stable technologies is a good guideline to follow. This guideline is especially important with less tech-savvy older adults.

Usability Issues

In its current forms, e-learning relies heavily on written text. Research has suggested that declines in reading comprehension among older adults are related to vision problems rather than cognitive decline (VanBiervliet, 2004). E-learning designers must be aware of these sensory changes when designing courses. Based on the findings from numerous research studies, the National Institute on Aging (NIA) and the National Library of Medicine (NLM) (2002) developed guidelines for ensuring that websites are friendly for older users. The major guidelines included the following (1) using only sans serif fonts (e.g., "Arial" font), (2) using 12 or 14 point font size, (3) using double spaced text, (4) using left justification, (5) avoiding the use of yellow, blue, or green in close proximity, (6) avoiding patterned backgrounds, (6) inserting text alternatives for all graphics, and (7) using a consistent layout throughout the website. Additionally, Taylor et al. (2004) recommend providing "print friendly" versions of web pages since most older adults prefer to read from paper rather than a computer screen.

Stoltz-Loike, Morrell, and Loike (2005) conducted usability tests with computer-proficient older adults to determine whether the NIA/NLM guidelines were applicable to e-learning applications (since the guidelines were designed for websites, not e-learning applications). They determined that the guidelines are a good starting point. However, their study found that older adults, like those at other ages, require interesting and engaging material. They also found that aesthetics were important. Although their initial e-learning program met the technical requirements of the usability guidelines, the participants asked for a more attractive layout. When these issues were addressed, subsequent usability tests found that users rated the programs higher. Programs that comply with usability guidelines do not need to sacrifice visual appeal. Older adults are not content with usability alone—aesthetics are also important.

Although e-learning is dominated by text, audio and video use are becoming more common. VanBiervliet (2004) emphasizes the need to use slower speech in audio presentations based on the large body of research showing that some older adults have a decline in working

memory (e.g., memorizing a to-do list and remembering which items are still left on the list while completing the items). Older adults can learn new skills and concepts as well as younger learners; however, they generally learn more slowly (Chaffin & Harlow, 2005). Therefore, considering the speed of audio presentations is crucial. Additionally, providing written transcripts can be helpful for visual learners or those who have difficulty hearing. Asynchronous e-learning is well-suited to address these needs since it provides the opportunity for self-directed learning and moving at one's own pace.

Course Design

Inappropriate sequencing of courses and undesirable course features can result in frustrated students. Taylor et al. (2004) found that older adults engaged in face-to-face software training preferred an informal structure, instead of a formalized, linear class structure. This finding is in agreement with the above suggestion of allowing for a slower pace in course progression and more control over learning schedules. However, the idea of older adults preferring an informal structure goes against conventional ideas about older adults, which we think of as preferring more formally structured and linear courses. Future research is needed to determine how these findings apply to e-learning settings. One way to provide a less formalized, pre-determined online learning course is through the use of interpersonal interaction and dialogue. Swindell (2002) found that, while some participants in Australian U3A online courses wanted to engage in extensive online interaction, others did not. However, all participants said they enjoyed reading the profiles and messages from others. Like other groups of learners, learning preferences vary by individual. Some online learners benefit from actively observing discussions and others prefer to be actively posting messages (Githens, in press; Picciano, 2002; Sutton, 2001). Future research could explore the factors that influence older adults' participation in dialogue in online courses and their needs regarding structure (or lack of structure) in courses that are not designed in a linear manner.

Problematic New Technologies

Increasingly, games are being used in e-learning programs. VanBiervliet (2004) asks that designers be cautious in the use of games in e-learning. Typically, games require users to explore the interface for subtle clues and functions. Additionally, users of games are often forced to proceed rapidly, with less time for thought and contemplation. Given the declines in working memory among some older adults, these types of designs could cause usability obstacles for some older adults. For example, an educational game that requires very quick decisions may be difficult for those individuals to use. In the past, younger programmers designed software and websites. Many of these programmers failed to consider the needs of older adults. Therefore, consideration of older adults' needs is required throughout the design and development phases to ensure that these past mistakes are not repeated again. Additionally, e-learning designers should ensure that usability tests are conducted with individuals from a wide range of ages.

Mobile devices and mobile learning present another set of challenges for older adults. The small displays and tiny keyboards present major usability obstacles for some older adults. As technology improves and foldable displays become widely used, these obstacles should become less of a concern. Early experimental tests have found that novice older adult computer users perform better using touch screen/handwriting recognition input devices, as opposed to voice input or mouse/keyboard input devices (Rau & Hsu, 2005). Mobile devices, with their use of touch screens and handwriting recognition, may be promising tools for older users. However,

until foldable devices become common, some older users will be excluded from using these mobile tools.

Conclusion

The future is bright for adults entering older age. Opportunities abound for reshaping the place of these individuals in our society. Older adults will undoubtedly be participants in e-learning programs. The question is whether individuals and groups will collaborate to maximize the potential of older adults. First, there are opportunities to work with older adults on creating new e-learning initiatives and programs that contribute to the greater good of society by encouraging empowerment and social action. Second, workforce development programs have the opportunity to transform current course offerings into programs that help older adults contribute to society through new careers. Finally, workplaces and non-profit organizations have an opportunity to strategically tap this massive population. Decision makers, e-learning designers, and researchers should not ignore this opportunity. Through consideration, collaboration, and future research, education and e-learning can play a central role in this societal transformation.

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