Promoting Older Adult-Computer Interaction: Age-Appropriate Design and Training

Bo Xie, Ph.D.
College of Information Studies
University of Maryland, College Park
boxie@umd.edu
May 31, 2007
Why Older Adults?

- The older population is a rapidly growing yet technologically underserved social group
- An ideal target audience for developers of user-friendly IT products and services
- Can lead to consideration of the needs of other technologically underserved users
The Aging Trend: The American Population is Aging

In 2000: Age 65+ (12%)
The Aging Trend: The American Population is Aging

In 2000: Age 65+ (12%)

In 2011, the baby boomers will begin to turn 65
The Aging Trend: The American Population is Aging

In 2000: Age 65+ (12%)

In 2011, the baby boomers will begin to turn 65

By 2030: Age 65+ (20%)

Source: http://www.census.gov/
When the aging trend meets the IT trend…

• Most age groups have experienced significant growth in Internet usage

• Still, Internet use among different age groups is far from even
Percentage of each age group who "use the internet" and "send or receive email"

Age 18-29: 83%
Age 30-49: 82%
Age 50-64: 70%
Age 65+: 33%

Pew Internet & American Life Project:
Demographics of Internet Users
## Generational Differences in Online Activities

<table>
<thead>
<tr>
<th>Online Teens¹</th>
<th>Gen Y</th>
<th>Gen X</th>
<th>Trailing Boomers</th>
<th>Leading Boomers</th>
<th>Matures</th>
<th>After Work (70+)</th>
<th>All Online Adults ²</th>
</tr>
</thead>
<tbody>
<tr>
<td>(12-17)</td>
<td>(18-28)</td>
<td>(29-40)</td>
<td>(41-50)</td>
<td>(51-59)</td>
<td>(60-69)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Go online</td>
<td>87%</td>
<td>84%</td>
<td>87%</td>
<td>79%</td>
<td>75%</td>
<td>54%</td>
<td>21%</td>
</tr>
</tbody>
</table>

*Teens and Gen Y are more likely to engage in the following activities compared with older users:*  

| Online games | 81%    | 54%    | 37%    | 29%     | 25%     | 25%    | 32%     | 36%     |
| School research | *      | 73%    | 60%    | 61%     | 48%     | 33%    | 14%     | 57%     |
| Instant message | 75%    | 66%    | 52%    | 38%     | 42%     | 33%    | 25%     | 47%     |
| Text message  | *      | 60%    | 44%    | 29%     | 15%     | 11%    | 8%      | 35%     |
| Get info about a school | 57%    | 59%    | 42%    | 50%     | 40%     | 30%    | 14%     | 45%     |
| Download music | 51%    | 45%    | 26%    | 16%     | 14%     | 8%     | 5%      | 25%     |
| Read blogs    | 38%    | 41%    | 30%    | 20%     | 21%     | 19%    | 16%     | 27%     |
| Download video | 31%    | 27%    | 22%    | 14%     | 8%      | 8%     | 1%      | 18%     |
| Create a blog | 19%    | 20%    | 9%     | 3%      | 9%      | 3%     | 4%      | 9%      |
Barriers to Older Adults’ Use of IT

• Age-related changes in cognitive, perceptual, and physical abilities

• Lack of age-appropriate training and technical support

• Lack of access especially among low-income older adults
Interventions

• Technological: senior-friendly interfaces and systems

• Educational: training materials and procedures for older adults
Technological Interventions

• The National Institute on Aging/National Library of Medicine guidelines for designing senior-friendly Web sites

• Three key aspects:
  • 1) readable text;
  • 2) info. presentation;
  • 3) navigation

Making Your Web Site Senior Friendly: A Checklist
Educational Interventions

• Much less attention has been paid to training
• Potential facilitating factors:
  • e.g., instructor- instead of computer-based;
  • small group setting
  • a friendly and supportive environment
Limitations of Current Computer Training Programs for Older Adults

• Only last for a limited period of time

• Only focus on the end result of IT learning

• Ignore that the *process* of IT learning matters as well
Older Adult Computer Learning: Offline & Social

• The physical setting

• Social interactions, friendship, & social support
A Balanced Approach to Older Adult Computer Training/Learning

- Formal
- Educational
- Online

- Informal
- Social
- Offline
A balanced approach to older adult computer training

- The direct goal: to improve the efficiency of training
  (A Means)

- The indirect goal: to improve quality of life
  (An End)
Research-in-Progress

- A three-stage research project to promote older adult-computer interaction
- Focus on e-health literacy
- Partner with public libraries
- Reach low-income older adults
Stage 1: Summer 2007

- Interview older adults about their:
  - Health information needs and sources
  - Use (or non-use) of IT for health info.
  - Barriers to use of IT for quality health info.
  - Potential interventions that may help overcome those barriers
Stage 2: Fall 07-Spring 08

- Develop and provide training materials & procedures
- Focus on online health information
- Build on resources developed by the NIH
Stage 3

• Develop a practical and sustainable model for public libraries to promote e-health literacy
• Older adults as peer instructors
• Promote lifelong learning, volunteering, civic engagement, and empowerment
Health Informatics in An Aging Population Workshop

• When: 9:00 am – 5:00 pm, June 1, 2007

• Where: Computer Science Instructional Center (CSIC), Room 2118

• http://www.cs.umd.edu/hcil/soh/OlderAdults-SCHEDULE.pdf
Acknowledgements

- I thank the National Science Foundation (Dissertation Research Improvement Grant #0431373) and the University of Maryland (General Research Board Faculty Summer Research Grant, and Engaged University Community Partners Program Grant) for providing funding for my research.

Thank you! Questions?