

*Helping Older Adults Search for Health Information Online*

## **A Toolkit for Trainers**

**from the National Institute on Aging**



# **Quick Tips FOR A SENIOR FRIENDLY COMPUTER CLASSROOM**

Use these **Quick Tips** to provide more effective computer and Internet training for older adults. The tips are based on NIA-funded research showing how cognitive and physical changes in older adults affect computer use and on research with older adults in actual computer classes.

Questions or comments about the Toolkit? Contact the National Institute on Aging at (301) 496-1752 or e-mail [daileys@nia.nih.gov](mailto:daileys@nia.nih.gov)



## Quick Tips for a Senior Friendly Computer Classroom

To help older adults learn how to use the computer and Internet, trainers should follow these steps.



### Step 1: Create an Environment for Learning

- Put Students at Ease
- Tell Students What to Expect
- Make It Easy to Ask for Help



### Step 2: Present Information Clearly

- Make Sure You Are Understood
- Encourage Questions



### Step 3: Help Students Stay Focused

- Keep Focused on the Goals
- Stay on Task
- Keep Discussions on Track
- Minimize Distractions



### Step 4: Help Students Retain Information

- Repeat and Reinforce
- Use Written and Visual Information
- Provide Hands-on Practice
- Schedule Classes Close Together



### Step 5: Accommodate Physical Changes

- Vision
- Hearing
- Motor Skills
- Other



## STEP 1: Create an Environment for Learning

For many older adults, computers and the Internet are exciting but complex new technologies. Older students may be eager to learn what these technologies can offer,<sup>1</sup> but unsure of their ability to master them.<sup>2</sup> Research has shown that appropriate training can modify these attitudes and that older adults are fully capable of learning to use computers and the Internet.<sup>3</sup>

To create an environment that makes learning these technologies as easy as possible for older adults, follow these steps.

### Put Students at Ease

- 1** Ask if students are comfortable being addressed by their first name. Some older students may be more comfortable with last names.
- 2** When students introduce themselves, ask them to describe one or two life accomplishments. Use this information to point out their problem-solving skills and learning capacities.
- 3** Ask how many students have learned to use each of the following: area codes, ATMs, microwaves, remote controls, message machines, telephone menus, VCRs, cell phones, CD players, DVDs, etc. Point to any successes as examples of their capacity to master new technology.
- 4** Stress the sturdiness of the equipment and assure students that they cannot hurt it. The worst thing that could probably happen is that they would have to re-boot (start the computer again).

## STEP 1: Create an Environment for Learning (contd.)

### Tell Students What to Expect

- 5 Explain that the class will proceed in a step-by-step manner and at a slow-to-moderate pace to make sure that everyone grasps the information and learns the skills. Tell them that there will be lots of hands-on practice and that information will be repeated often.
- 6 Tell students to expect that some tasks may be difficult at first and may cause them some frustration. Assure them that it is normal to make mistakes when learning anything new, especially technology, and that being patient and sticking with it will help them be successful.

### Make It Easy to Ask for Help

- 7 Use classroom aides or peer coaches to provide one-one-one instruction. When assisting students with the mouse, you or the coach may wish to ask, "May I touch your hand?" before helping them.
- 8 Find an inconspicuous way for students to let you know if they are "lost" or not keeping up with the class. Giving a "thumbs down" or placing an item on top of their monitor might be ways to signal for help.
- 9 At the beginning and/or the end of class, have students write down any questions they may have on index cards and give them to you. This lets you address issues which they may feel uncomfortable asking in front of the entire class.



## STEP 2: Present Information Clearly

Many studies have shown that mental operations slow down as we age and that older adults are slower at processing information.<sup>4</sup> Older adults may take longer to fully grasp material that is presented to them, and it may be harder for them to draw meaning from ideas that are not expressed in a concrete manner.

Follow these steps to make sure students fully comprehend the information you provide.

### Make Sure You are Understood

- 1** Speak slowly, clearly, and explicitly, but don't talk down to your audience.
- 2** Pause after delivering a segment of information to make sure students are following you. Delivering information in small "chunks" is less likely to overwhelm students than information delivered in long segments.
- 3** Use priming – a preview of upcoming tasks or activities – to prepare students for material to be covered. Ways to prime include writing the lesson objectives and class agenda on the board, describing the next activity just before you teach it, saying what will happen after the break, or giving the agenda for the next class.
- 4** Avoid using the indefinite referent (i.e., using "this", "that", "it" etc.) to refer to previous information. Sometimes it may be difficult for students to recall what "this" or "it" refers to. Instead, re-state the fact, item, person, or issue you are referring to. Example:

**Avoid:** Use a mouse to move the cursor around the screen.  
You can also use **it** to help you scroll.

**Say instead:** Use a mouse to move the cursor around the screen.  
You can also use **a mouse** to help you scroll.



## STEP 2: Present Information Clearly (contd.)

**5** Use the active instead of the passive voice whenever possible. Example:

**Avoid:** The mouse can **be used** to move the cursor around the screen.

**Say instead:** You can **use** the mouse to move the cursor around the screen.

### Encourage Questions

**6** Stop frequently to ask students if they have questions or if there is anything they don't understand. Allow sufficient time – at least 8 to 10 seconds – for them to formulate their question before moving on. Assure them that there are no "stupid" questions.

**7** Make sure everyone knows what the question is before you answer it (i.e., "Did everyone hear the question?").

**8** Demonstrate answers by using the computer or computer projector whenever possible.



## STEP 3: Help Students Stay Focused

Increased age often brings an inability to stay focused on specific information and eliminate distractions.<sup>5</sup> To help older students concentrate on the material being taught, it is important to use strategies that focus their attention and minimize distractions.

The following steps can help.

### Stay Focused on the Goals

- 1 Clearly indicate the objectives for each part of the lesson so that students know what they are supposed to be learning at any given time. You may wish to write the objectives on the blackboard and check them off as you complete them.
- 2 Make clear verbal transitions between parts of the lesson to let students know that one section has been completed and another one started. (i.e., "Now that we've finished learning about the search box, we're going to move on to the site map.")

### Stay on Task

- 3 Make sure students know what the current task is. You may wish to write the task on the blackboard or flip chart.
- 4 Check in frequently with students to make sure they are at the right place in the lesson. Circulate and check their computer screens to make sure they are following you.



## STEP 3: Help Students Stay Focused (contd.)

### Keep Discussions on Track

- 5** Keep your statements and answers brief and to the point. Refrain from lengthy explanations, especially about technical issues not immediately relevant to the skills being taught. Distinguish between “need to know” and “nice to know” information.
- 6** Don’t let individuals dominate class discussions. If one person is speaking too long, you might say, “Thank you for your comments. Does anyone else wish to add something?”

### Minimize Distractions

- 7** Pass out each handout when needed. If handouts are passed out early, students may read ahead, pick up the wrong handout for an activity, or rustle papers and distract others.
- 8** Be mindful of fatigue or dropping energy levels. If students get tired, this can cause them to lose focus and make it harder to take in new information. Allow for frequent stretch and bathroom breaks.
- 9** Keep class length to around 90 minutes or less. If the class is longer, devote the additional time to hands-on practice.





## STEP 4: Help Students Retain Information

Research shows that working memory declines with age.<sup>6</sup> Working memory is the capacity to store and manipulate information simultaneously, such as being able to listen and take notes at the same time. In an Internet training class with older adults, a decline in working memory may show up when students can't easily recall the path they navigated to their current page or remember all the steps in a procedure just taught (i.e., how to open and close a window).

Follow these steps to help students retain information.

### Repeat and Reinforce

- 1** Be prepared and willing to repeat information. Repeating helps students who may not have heard or understood the information the first time. It also reinforces the information for others and/or confirms that they heard it correctly.
- 2** Summarize information at frequent intervals to reinforce what has been taught. (i.e., "We've just finished learning how to type in a URL. I'll summarize. To type in the URL, first locate the address box, then place the cursor inside, next, etc... Are there any questions?") This not only allows students to hear the information a second time, it gives them a chance to see if they have understood the material and an opportunity to ask for help if necessary.
- 3** If students are having trouble with a task, slow down, determine what the problem is, and re-teach the material in smaller steps.

### Use Written and Visual Information

- 4** Use the blackboard to write down class goals, the current task, new terms, important URLs, the homework assignment, etc. Arrange information to avoid a crowded look.



## STEP 4: Help Students Retain Information (contd.)

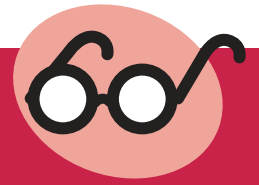
- 5** Provide checklists and “how-to” sheets that spell out steps in a procedure (i.e., how to open and close a window). Make sure the font is at least 12 point.
- 6** Use handouts with visuals and graphics to illustrate terms, features, navigational paths, etc. Print out screens to help students recall web pages visited in class.
- 7** Provide space on handouts for students to take notes.

### Provide Hands-on Practice

- 8** Provide guided hands-on practice of skills just taught.
- 9** Have students work in pairs during hands-on activities. They may help each other recall information. As you circulate, you may hear information about parts of the lesson that need reinforcing.
- 10** Assign hands-on practice activities as homework to reinforce what is learned in class.

### Schedule Sessions Close Together

- 11** Schedule class sessions close together to make it easier for students to retain what is taught from class to class.



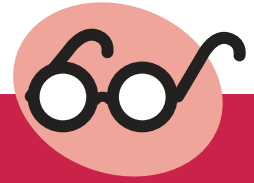
## STEP 5: Accommodate Physical Changes: Vision and Hearing

**Vision:** Changes in vision that occur with age, including reductions in the amount of light that reaches the eye, can make it more difficult to read a computer screen and handle glare.<sup>7</sup> It may be hard to distinguish between certain colors. Also, many older adults wear bifocals or trifocals which may affect how well they can view the computer screen.

- 1 Position yourself so that everyone can see you.
- 2 Adjust the monitors before class starts to eliminate glare.
- 3 Arrange to have larger monitors.
- 4 Visit websites that have large type (12 point or larger) and high color contrast (i.e., black type against a white background) to make it easier for older eyes to see.

**Hearing:** Within the range of hearing, the higher pitches are the first to be negatively affected with age. It is easier to hear voices pitched at a lower level.<sup>8</sup> Many older adults also have hearing loss and may wear hearing aids.

- 1 Position yourself so that everyone can hear you.
- 2 Tell students you are doing a “sound check,” and ask those who can hear you to raise their hands. Seat those who do not raise their hands closest to you.
- 3 Note which class members have hearing aids and seat them closest to the instructor. Be alert to people cupping their ear or turning the good ear toward you to hear.
- 4 Face students when speaking so they can see your lip movements.
- 5 If accessing websites where sound is important, make sure the volume on students’ speakers is adjusted.



## STEP 5: Accommodate Physical Changes: Motor Skills and Other Physical Changes

**Motor Skills:** The decline in motor skills and eye/hand coordination affects the ability of older adults to use a keyboard and control a mouse.<sup>9</sup> Arthritis can affect their ability to hold the mouse and keep it still while clicking, dragging, or scrolling.

- 1 If motor skills, arthritis, or tremors are a problem, show students how to use the “page up” and “page down” buttons to scroll.
- 2 Encourage the use of a mouse with a trackball.

**Other Physical Changes:** Thinning skin and decreased circulation can make many older adults sensitive to cooler temperatures. Other health issues such as mobility problems, back and joint issues, or even overweight can affect one’s level of physical comfort in a classroom.

- 1 Computer labs are sometimes cold. Make sure the temperature of the room is comfortable. Have students bring a sweater.
- 2 Seat people with mobility problems or in wheelchairs at the ends of rows.
- 3 Make sure you have chairs without arms.
- 4 Many people may have back or hip problems and may find it hard to sit comfortably for long periods of time. Have frequent stretch breaks to allow them to move around.
- 5 Know where a phone is (cell phone or land line) in case there is an emergency.



## Footnotes

- 1 Morrell et al, 2000
- 2 Pilot Test Evaluation, National Institute on Aging, 2006
- 3 Kelley, Morrell & Park, 1999
- 4 Craik & Salthouse, 2000
- 5 Hasher & Zacks, 1988
- 6 Craik & Salthouse, 2000
- 7 Echt, 2002
- 8 Fozard & Gordon-Salant, 2001
- 9 Rogers & Fisk, 2000



## References

- Bean C. Meeting the Challenge: Training an Aging Population to Use Computers. *Southeastern Librarian* Fall 2003; 51 (3): 16-25.
- Becker K, Coleman J. Tips for Teaching Older Adults to Use Computers. Presented at TriConference, sponsored by the Kansas Library Association 2005.
- Cuciti JM. Computer Instruction and Andragogy: Best Methods to Teach the Elderly E-mail as a Communication Tool. Master's Thesis, University of Oregon Applied Information Management Program 2005.
- Craik FIM, Salthouse TA. *The Handbook of Aging and Cognition*. Mahwah, NJ: Lawrence Erlbaum Associates 2000.
- Czaja SJ, Lee CC. The Impact of the Internet on Older Adults. In N. Charness & K.W. Schaie (Eds.), *Impact of Technology on Successful Aging*. 113-133. New York: Springer Publishing Company 2003.
- Czaja SJ. Computer Technology and the Older Adult. In *Handbook of Human-Computer Interaction*, 2nd, Completely Revised Edition. New York: Elsevier 1997.
- Echt KV. Designing web-based health information for older adults: Visual considerations and design directives. In RW Morrell (Ed.), *Older Adults, Health Information, and the World Wide Web*. 61- 88. Mahwah, NJ: Lawrence Erlbaum 2002.
- Fox S. et al. Are Wired Seniors Sitting Ducks? Washington, D.C.: Pew Internet & American Life Project. April 11 2006.  
[http://www.pewinternet.org/PPF/r/180/report\\_display.asp](http://www.pewinternet.org/PPF/r/180/report_display.asp) Accessed October, 2006.
- Fozard JL, Gordon-Salant S. Changes in Vision and Hearing. In *The Handbook of the Psychology of Aging*, 5th ed. San Diego: Academic Press 2001.
- Hasher L, Zacks R. *Working Memory, Comprehension, and Aging: A Review and a New View: The Psychology of Learning and Motivation*. New York: Academic Press 1988.
- Jones BD, Bayen UJ. Teaching Older Adults to Use Computers: Recommendations Based on Cognitive Aging Research". *Educational Gerontology* 1998; 24.7: 675-689.

## References



- Kelley CL, Morrell RW, Park DC, Mayhorn, CB. Predictors of Electronic Bulletin Board System Use in Older Adults. *Educational Gerontology* 1999; 25: 19-35.
- Larkin-Leffers PA. The Older Adult and Public Library Computer Technology: A Pilot Study in a Canadian Setting. *Libri* 2000; 50 (4): 225-234.
- Mayhorn CB, Stronge AJ, McLaughlin AC, Rogers WA. Older Adults, Computer Training and the Systems Approach: A Formula for Success. *Educational Gerontology*, 2004; 30 (3):185-203.
- Morrell RW, Dailey S, et al. *Older Adults and Information Technology: A Compendium of Scientific Research and Web Site Accessibility Guidelines*. National Institute on Aging, 2003.
- Morrell, RW, Mayhorn CB, Bennett J. A survey of World Wide Web use in middle-aged and older adults. *Human Factors* 2000; 42:175 - 182.
- National Institute on Aging and the National Library of Medicine. Making Your Website Senior Friendly: A Checklist. 2002.  
<http://www.nlm.nih.gov/pubs/checklist.pdf> Accessed October, 2006.
- Pilot Test Evaluation Report of the National Institute on Aging's Guide for Training Older Adults to Access health Information on the Web*. National Institute on Aging, 2006.
- Reynolds S, Mims A. Teaching the Older Adult. *Journal of the American Geriatrics Society* March 2000. 53 (3):554.
- Rogers WA, Fisk AD. Human Factors, Applied cognition, and Aging. In FIM Craik and TA Salthouse, eds. *The Handbook of Aging and Cognition*, 2<sup>nd</sup> ed., Mahwah, NJ: Lawrence Erlbaum Associates, 2000.
- Stevens B. How Seniors Learn. *Center for Medicare Education* 2003; 4(9).
- Van Flett C, Antell K. Creating CyberSeniors: Older Adult Learning and its Implications for Computer Training. *Public Libraries* May/June 2002: 149-155.