

Case Study

Techniques for Enabling the Older Population in Technology

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Abstract

Computer literacy is a pre-requisite for eLiteracy. However, there is a significant segment of the population which was virtually bypassed by the electronic revolution. These people are primarily retired or close to retirement, and are finding it increasingly necessary to have computer skills, yet due to the aging process, learning those computer skills is more difficult for them. This case study reports on how the staff of the North County Regional Library Computer Center addressed those issues and developed a series of classes for first time computer users. Based on research into issues in gerontology, such as cognitive and motor declines, as well as automaticity and semantic memory, the staff modified materials and techniques to create a beginning-level computer course consisting of four lessons, which has been offered by the Library since early 2003. Participants have ranged in age from middle-age to elderly (80+ years). Since participants must go through the instructors to register, classes have been limited to those who were total novices, with virtually no exposure to computers. While the course has been successful in enabling those who have “fallen through the cracks,” it is resource intensive. Recommendations for improvement, based on observation and participant feedback include using a different free e-mail provider and increasing the number of classes to five.

Keywords:

Computer training, computer literacy, elderly, older adult

1 Introduction

Computer literacy is the base component of eLiteracy. Just as no one is born knowing how to read, neither is anyone born knowing how to use the tools necessary for what we call eLiteracy. This case study is about teaching the tool.

The following presumptions are well documented in the literature:

- Computers and related technology have become an integral part of life today. As Dr. Allan Martin pointed out in the keynote address at the 2004 eLit Conference, “You really have to work hard to avoid coming into interaction with the e-world.”
- There is a gap in the number of older people (65+ years) using computers compared to younger people. The Pew Report on Internet Use, February 2004, reported only 22% of people over 65 are accessing the Internet, and 58% of people aged 50-64 are accessing the

Internet, while 75% of 30-49 year-olds are accessing the Internet and 77% of 18-29 year-olds are accessing the Internet.

- Older people have more difficulty learning to use computers. The attentional and cognitive processes required in learning computer tasks are also those most affected by the aging process. Physical factors such as arthritis, tremors, cataracts and declining vision negatively impact an older person's ability to use a typical computer. (Kelley & Charness, 1995; Czaja, et al., 1998)
- Manipulating training materials and techniques in computer training can improve the outcome for older adults, as well as all adults. (Jones & Bayen, 1998)

2 Background

In Palm Beach County, we have a large percentage of older adults, both permanent and seasonal residents. To meet the needs of this segment of the population in learning to use computers at the library, lecture and hands-on classes are offered. Hands-on classes were offered first at the Main Library in a computer lab funded by a grant from the Bill and Melinda Gates Foundation. The Palm Beach County Library System subsequently set up a computer lab at the North County Regional Library in September, 2001. Depending on class size and experience level, we use one trainer with one assistant who helps students throughout the class. In general, the less experienced the students, the more assistance they need. A 3:1 student trainer ratio is generally required in the more basic skills classes to be able to limit class time to one hour.

The North County area includes more affluent towns and subdivisions, and a growing population of both retirees and professionals. Our students tend to be:

1. Older adults who have bought (or want to buy) a computer for the first time,
2. Older parents who have been given a computer (new or used) by a grown child who lives somewhere else, and
3. Adults who need to be able to use a computer to get a job or go to school

Often these people have tried to take computer classes elsewhere in the community, but were unable to absorb anything useful to them, because the classes were either too fast paced or assumed a pre-existing knowledge of terms and concepts. The Library's own classes were not immune from this presumption.

Our Online Catalog classes were developed in the 1990's with a text based system. After Microsoft Windows was deployed on patron access computers, a short fifteen minute lesson on using the mouse was added. Since the graphical user interface for the Online Catalog required minimal use of the mouse, lack of mousing skills were not a big problem. However, as older adults began taking our other hands-on computer classes, problems with the mouse became a major issue. Some of the fundamentals of using the mouse were incorporated into the Windows Basics class, but it is difficult for older novices to retain new information while trying to master using the mouse.

2.1 The Mouse

In the Fall of 2002, we created a one hour mousing class using a version of the New User Tutorial created by The Library Network Technology Group in Michigan which we modified and expanded to include links to practice and games. Initially we linked to outside sites for practice, such as versions of Chris Rippel's *Mouserobics* (Central Kansas Library System), and to free shockwave games available on the Web. We began encountering problems with the outside sites changing or being unavailable. We also had an opportunity to see the effectiveness of the tutorial first hand, and where improvements were needed. We began work on a comprehensive in-house product, Mousing Around (www.pbclibrary.org/mousing/), which included practice and games and could be downloaded to operate on a standalone machine without Internet access (www.pbclibrary.org/mousing/mousing.exe). The Mousing Around Tutorial was officially deployed in October of 2003.

The Mousing Around tutorial effectively addresses the problem of using a mouse, but we found the structure of the rest of the classes was still a problem for older students. The recommended progression was to take the Mousing Around class if necessary, take the Windows Basics class, and then take other classes such as Microsoft Word and Browser Basics. Many of the older adults would forget most of what they had learned before the next class, usually a week later, or longer, and some could not make the connection between what they were being taught and how they would use it ("but what is this good for?").

3 A New Approach

After assessing existing classes and techniques, we decided to try a series of classes that would:

1. Teach students how to use the mouse
2. Teach them some of what happens as they use a computer (the unexpected)
3. Teach them how to use a browser, and introduce the World Wide Web
4. Give them something to do on the Web (e-mail)

The result was our Getting Started course. Based on the available research into computer training and older adults (for a review, see Bean, 2003), we set up procedures to insure success:

1. Participants must be motivated (not just looking for something to do)
2. Participants must commit to attending all classes and doing the practice exercises.
3. Classes are scheduled no more than 3 days apart, to reduce the likelihood of forgetting what was learned.
4. Simple practice exercises must be completed between classes to reduce the likelihood of forgetting what was learned.
5. Handouts utilize text and graphics in a simple, step-by-step format.
6. Exercises utilize discrete, numbered steps.

Prospective students are screened by the instructors to determine their actual computer skills, their motivation, and commitment to attending all of the classes. Students who are admitted to the class are given, or mailed, a welcome letter with the schedule of classes and an outline of

what they will learn in each class (see **Appendix A: Course Outline Handout**). In addition, we call a few days before the first class to confirm that they can still come.

Class One covers the Mousing Around tutorial. The computers are already set up when the students arrive, with the Browser opened, full screen, to the Mousing Around start page. The first dozen slides advance only by pressing the “Enter” key on the keyboard. Right clicking is disabled until they get to the slide which explains the right mouse button (this part is modified for Macintosh users). We then take them through practical applications of using the mouse: using the scrollbar, clicking and double clicking on icons, using forms, and closing windows. We go slowly through the first segment, then let the students proceed at their own pace through the Mousercise segment. Since they haven’t learned how to use the parts of the browser, they must come back to the library to do their first assignment, which is to repeat the Mousercise segment of the tutorial.

The importance of doing the practice exercises is strongly emphasized. Timing of those exercises is also important. Students should complete the exercise before the day of the next class (not the morning of the next class). Although some who do the exercises still have problems with the next class, those who do not do the exercise always have difficulty with the next class. Even a two day gap between computer sessions will result in loss of skills learned. While only one practice exercise is required, we encourage the students to do the exercises as many times as they can, especially if they have not mastered the mousing skills required for the next class.

Class Two is an introduction to the Internet Explorer browser. We briefly review the parts of the last class which they need to proceed, such as using the scrollbar, closing windows, and opening programs from icons on the desktop. They are taught the minimum they need to know to use the browser once it is opened: typing an address in the address bar, identifying and clicking on links, and using the back and forward buttons. We visit several sites, both commercial and non-profit, including governmental. Web sites are selected to give students an opportunity to experience many of the situations already encountered in the Mousing Around class, such as pop up windows and forms. A list of the web sites is printed in large font for them to refer to when typing the addresses. The class includes a lot of repetition of such tasks as opening and closing the browser, and typing in web addresses. At the end of the class, we have the students open the browser and type in the address for the Games segment of the Mousing Around tutorial at least twice. Their second assignment is to come to the library, or use their own or someone else’s computer, and access the Games page of the Mousing tutorial by typing in the web address, then play a couple of the games.

In Class Three we review some of the skills from the previous class, then register everyone for an e-mail account and teach them how to send an e-mail message. By this class they must be able to open the browser and type in a web address. After successfully signing everyone up for free e-mail accounts we go through the following steps for using e-mail:

- Type in the web address for the e-mail site
- Log in
- Click on the link or button to compose an e-mail

- Type in the e-mail address, a subject, and a *very* short message
- Click the “send” button
- Log out

These steps are repeated several times. Their third assignment is to send two e-mails to addresses which are set up to auto-respond so there will be new e-mail for them when they come to the last class.

In Class Four we teach the students how to read their e-mail, how to reply to an e-mail, how to delete a message, and how to empty the “trash” or “deleted items” folder. If everyone has not been able to successfully send an e-mail message (we check the auto-respond accounts before class), we have the students exchange e-mail addresses and send each other an e-mail at the beginning of class, then respond to each other. This activity has actually turned out to be very popular, since the students have usually gotten to know each other during the classes and enjoy sending little notes this way.

4 The Results

Between January, 2003, and April, 2004, 90 people requested the Getting Started series of classes. Eighty-nine percent (n=80) actually attended the course. Eighty-four percent (n=67) completed the course. Despite our efforts to insure the participants would attend all the classes, nine percent (n=7) did not come to the last class, usually because they had a prior commitment. Six dropped out after the first class. One of those took the course later, one had health problems, one dropped out because the spouse was dropping the classes, and the rest (4%, n=3) found the class too difficult.

Thirty-seven percent of the people who signed up for the course subsequently signed up for additional classes at the library. Since we have a large seasonal population, others who completed the classes may have taken subsequent classes at their other residence. Also, since e-mail is the most common use of the Internet for this demographic group (see the Pew Internet and American Life Project) it is also possible that they did not want (or need) any other training.

We ask each of the participants to fill out an evaluation form at the end of the last class. Most of the questions are open-ended, in an attempt to lessen the “halo effect.” In fact, of the 62 evaluations returned, 97% responded “very” to each of the first three questions (see **Appendix B: Evaluation Form**). The open ended questions required write-in responses.

5 Discussion

Figures 1 and 2 show the responses to the first two questions. Not surprisingly, e-mail caused the most problems: 53% listed e-mail as the class they had the most difficulty with, while the mousing class was mentioned by 13% and the internet/browser class was mentioned by 5% of the respondents. The problems associated with the mousing class have been addressed with the changes made to the Mousing Around tutorial. The e-mail issues are discussed later. On a positive side, 16% responded “none,” and the 8% who responded “all” qualified their responses with comments like, “they were all hard at first,” or “I’m new.”

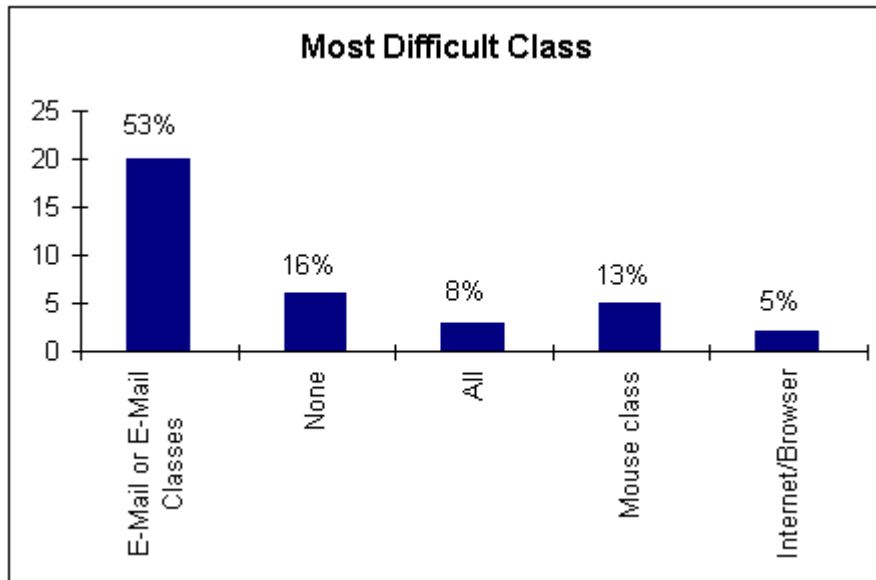


Figure 1

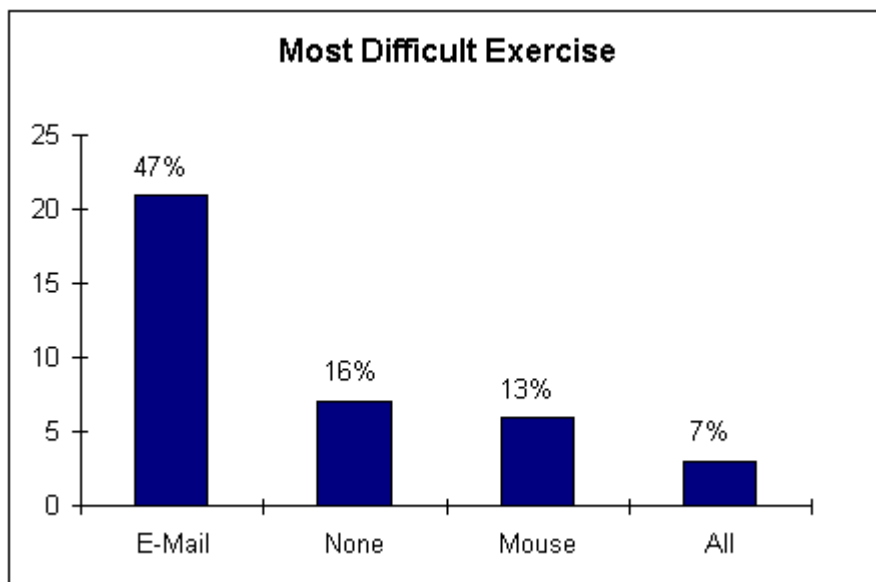


Figure 2

As might be expected, 26% responded “all” or “everything” to the third question: “What did you find most useful in this series of classes?”. As shown in Figure 3, specific items listed were fairly evenly divided between handouts, e-mail, instructors’ help and patience, practice, and repetition. A further indication of the effectiveness of the classes is the large number of respondents who thought nothing in the training was least useful (see Figure 4), although 28% indicated they wanted more classes (see Figure 5). It is interesting to note, however, that 10% thought e-mail was the least useful part of the training.

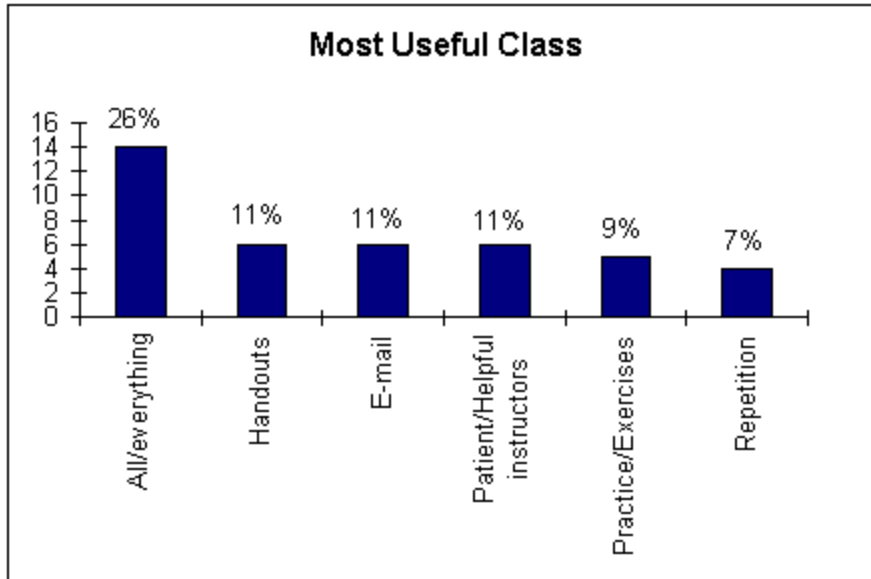


Figure 3

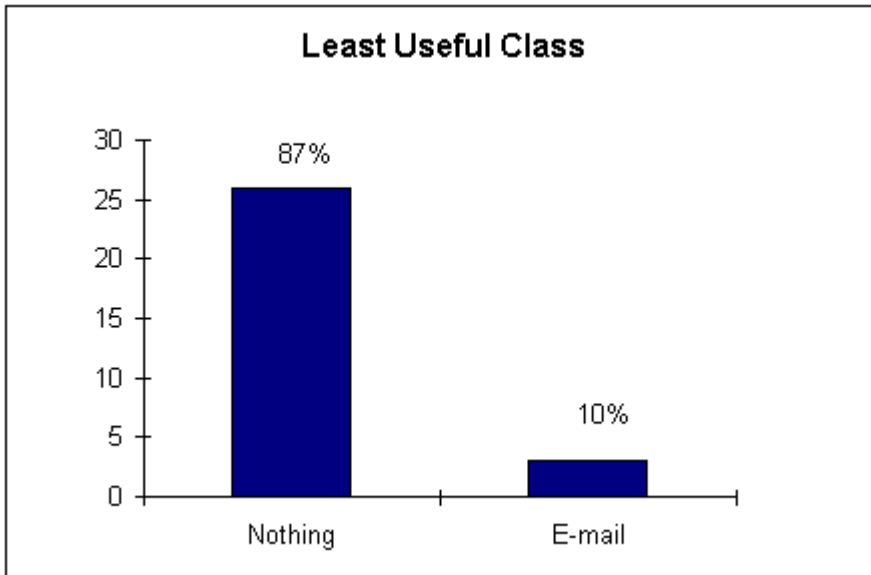


Figure 4

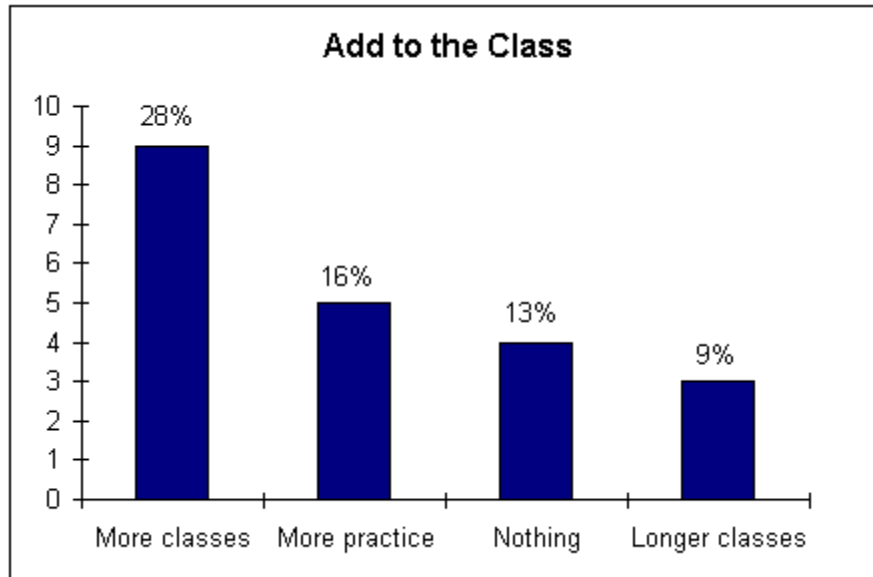


Figure 5

On the whole, the participants responded very positively to the training. Most came in feeling “stupid” or a “lost cause” or just afraid of computers. All left with a heightened comfort level and a sense of accomplishment. A sampling of comments written on the evaluation form is given in Figure 6.

Open-ended Questions:

Comments (samples):

“Thank you for making me a part of this modern world”

“Thank you so very much. I thought I was a lost cause”

“Thank you for the chance to learn without feeling so stupid”

“I felt this class was very good and I would like to continue more”

“Look forward to more classes”

Figure 6

5.1 The E-Mail Problem

We initially chose SAFe-mail (www.SAFe-mail.net) for e-mail accounts because of its minimal registration process, and the ready availability of handouts from existing classes which could be easily modified. The service has gone through several upgrades, however, which has added

complexity to its navigability. Consistently locating the relevant button to click is difficult for many of the class participants.

We have recently begun trying out a new e-mail provider, after SAFe-mail began limiting the number of registrations from an IP address so that after the first person registers subsequent registrations must go through additional steps to exclude automated signups. Even as easy as the two-step registration was, it took about ten minutes for the whole class to complete. The additional step added another ten minutes to the class and confused participants even more.

We began using Cool Goose (www.coolgoose.com), which has some advantages, but also some limitations. Sign up is a two page process, but the information on the second page is not required. While there are not as many options as with SAFe-mail, the e-mail related links are small and difficult for students to see, while the larger buttons at the top of the page are not e-mail related, which causes some confusion. There are also unlabeled buttons, which makes it more difficult for new users to learn. Our early assessment is that using Cool Goose is neither easier nor more difficult than using SAFe-mail, but registration for several people at one time is easier.

Another problem encountered in the e-mail classes involves using the text boxes. Although text boxes were encountered in the Mousing class, for many of these students it is difficult to remember to click in a text box to activate it (e.g., moving from username to password, or from the “To” box to the “subject” box when composing an e-mail message). A frequent question asked is, “How do you know whether to click or press the ‘Enter’ key?”

6 Conclusions

Based on feedback from the evaluations, which confirm what we have seen during classes, some of the options we are considering are:

1. Adding an additional class for e-mail;
2. Finding a better e-mail service (including investigating the possibility of hosting one in-house); and
3. Developing more tutorials like Mousing Around, using Flash components for modeling

While offering more classes is a possibility, we need to address staffing issues before we can accomplish this. We have found this level of class is most effective when there is a 3:1 student:trainer ratio, which is extremely resource intensive. The smaller class size (6 maximum) also seems to work very well in terms of student interaction and camaraderie, but limits the amount of people who can be trained with each session.

Finding and assessing other free e-mail services is an ongoing task. Due to our very limited success, we have begun investigating the possibility of hosting a service through the library’s server, but that option is also not without policy and service issues. The final option, developing more tutorials, with modeling, will take considerable effort, but is probably the most viable at this time.

In Palm Beach County, as everywhere, there are people falling through the cracks when it comes to learning computer technology. Our demographics indicate those falling through the cracks are not necessarily unable to afford computers and Internet access. They need training which is geared to their capabilities. Many simply need to see that they can learn to do it, or that computers are not as difficult as they think. The success of our Getting Started classes confirms that with changes in training technique, older adults can achieve eLiteracy.

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Appendix A: Course Outline Handout



Getting Started on the Computer
@your library™

What you will learn

- **Class One:** Using a Mouse
 - What the mouse is and what it does
 - How to hold a mouse
 - When to click
 - How to click, double click, and “click and drag”
 - How to use a scrollbar
 - What a cursor is, and how it changes appearance.
 - How to close a window

- **Class Two:** Getting on the World Wide Web
 - What a web browser is
 - How to open Internet Explorer browser
 - How to enter a web address in the address bar
 - How to use the Back and Forward buttons

- **Class Three:** Getting an E-Mail Account
 - What web-based E-mail is
 - How to register for a web-based E-mail account
 - How to log in and log out of an E-mail account
 - How to send an E-mail message

- **Class Four:** Using E-Mail
 - How to reply to an E-mail message
 - How to forward an E-mail message
 - How to delete E-mail messages

Appendix B: Evaluation Form

Getting Started with a Computer Evaluation

Please take a few moments to let us know how we did!

How helpful was this series of classes?	Very	Somewhat	Not at all
How helpful were the handouts?	Very	Somewhat	Not at all
How helpful were the exercises?	Very	Somewhat	Not at all

Which class did you have the most difficulty with?

Which exercise did you have the most difficulty with?

What did you find most useful in this series of classes?

What did you find least useful?

What would you like to see added to the classes?

Any other comments or suggestions:

Thank you!

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