

Teaching Senior Citizens How to Use the Internet and Student Engagement

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Abstract

This paper describes how the *Computer Science Volunteer Program* planned and taught a free Internet course for senior citizens in Victoria, British Columbia, Canada. This is the first program in North America where graduate students offer free Internet training to senior citizens. We found that personal attention and focusing on practice rather than theory, make Internet learning more enjoyable and less overwhelming for seniors. Graduate students, who form the majority of the Program, reported that they improved their leadership skills and felt more engaged in the community.

1 Introduction

Research has shown that participating in service activities during the undergraduate years substantially enhances the student's academic development, life skill development, and sense of civic responsibility. Simultaneously, it fulfils the basic institutional mission of providing service to the community (c.f. [2, 1]).

Although these facts apply to undergraduates, the benefits attained are just as valuable to graduates. For example, undergraduate students are more likely to interact with faculty; and, in contrast to the belief that spending time on service activities takes away

from time spent on studying, they showed a statistically significant increase in GPA (Grade Point Average). Students significantly improved their interpersonal skills, understanding of community problems, and knowledge and acceptance of different races and cultures. They also improved their understanding of national social problems, ability to work cooperatively, conflict resolution skills, and critical thinking.

In September 2007, computer science PhD candidate Lior Malka established the *Computer Science Volunteer Program* (CSVP). The goal of the Program was to use outreach as a means to promote graduate student engagement and leadership. Towards this goal, Malka suggested starting an Internet Course for senior citizens. The motivation for an Internet Course in Victoria is that the city has a large elderly population. Thus, such a course would greatly benefit the seniors' quality of life, allowing them to socialize, learn how to find information on the internet and use e-mails to stay in touch with relatives.

The volunteers developed an Internet Course for senior citizens who are at least sixty years old. The first offering of the course was in January 2008. Eighteen participants attended four weekly classes at the computer lab in the Computer Science Department of the University of Victoria, BC, Canada. Each meeting was an hour and a half long with a twenty minutes break. The course focused on browsing the Internet using the Google search engine, and

sending e-mails using Gmail. No previous knowledge of computers was assumed. The course was also offered in February, March and April 2008.

The goal of this paper is to describe how the we planned and taught the Internet Course, the teaching methodology we used, the feedback we received, and the lessons we learnt. Our findings are as follows:

- Personal attention, accessible language, and a focus on how to work things rather than how things work, all make Internet learning more effective and enjoyable for seniors. This supports [5, 4, 3].
- Graduate students who get involved in outreach improve their leadership and organization skills, and get closer to their peers and to the community. The Internet Course also helped students gain a better understanding of adult education.

2 Planning the Internet Course

The Internet Course was planned and organized by the authors of this paper. This section describes the rationale behind our decisions, and the four classes that we designed.

Volunteer meetings were held in a coffee shop at the University of Victoria to foster a relaxed and supportive atmosphere for the sharing of experiences and ideas. Having refreshments paid for by the department facilitated this atmosphere. In the first two meetings we defined objectives, means to achieve them, and responsibilities for various tasks including funding, advertising, enrolment, classroom space, and syllabus design. We agreed on deadlines for the completion of these tasks, and printed agendas and minutes for each meeting. Altogether, this made the coordination and the progress of the Program satisfying for the volunteers.

The planning took place in October and November of 2007. We decided to offer the Internet Course four times, from January 2008 to April 2008. Each course would be one month long, with four weekly meetings, each an hour and a half long. We received

a computer lab from the Computer Science Department, clarified liability issues with the University, and consulted an adult education coordinator. To test our syllabus we had two meetings, each with one potential participant. We observed that our participants had problems controlling the mouse. Also, the learning was less intimidating and more enjoyable when we used accessible language and focused on the practice, rather than theory.

To obtain free advertising and wide exposure we invited one of the popular newspapers in Victoria to write an article about the Program. Enrollment required a phone number and a full time secretary, and these were provided to us by the University of Victoria Graduate Student Society. All four offerings of the course, eighteen seats in each, filled within a few hours after the article was published. Hundreds of callers were turned down for lack of space.

We enrolled seniors who were at least sixty years old, did not know how to use e-mail, and were capable of studying in a class. We identified the most relevant and useful topics to be Internet browsing and searching, and sending and receiving e-mails. Considering time constraints and participants background, we decided to focus on the basics. We designed four classes:

- **Class 1.** Course overview, introductions, discussing why people are intimidated by computers, using the mouse, important keyboard keys, Google searching, the notions of a link and an address. Nicknames are collected for creating e-mail accounts.
- **Class 2.** A refresher on Google search, the notion of e-mail, logging into a Gmail account, and exchanging e-mail addresses with other participants. Composing, reading, and replying e-mails.
- **Class 3.** A refresher on Gmail, the notion of attachments, saving attachments, composing with attachments, and changing the password.
- **Class 4.** A refresher on attachments, creating folders, organizing files within folders, an open

session for general questions, summary of the course, and feedback forms.

3 Teaching the Internet Course

This section describes how we teach the internet course and what we observed.

Two weeks before the first class we call the participants to confirm their attendance. Before the second class we open Gmail accounts for the participants, prepare cards containing the information necessary to log into the accounts, and send a welcome e-mail. Before the third class we send an e-mail with photos attached. Other preparations require printing handouts, ordering coffee, and coordinating volunteers.

In each class we have one instructor, nine volunteers, and eighteen participants. This ratio and the fact that the volunteers can move freely between the rows of computers guarantee that participants receive sufficient attention.

The class begins at 2:30 PM with a summary of the previous lesson and an overview of the current lesson. For each topic, the instructor shows a short and concise example on the data projector, and then the participants practice the example with help from the volunteers. At 3:10 PM we take a 20 minutes coffee break. We noticed that during the break participants enjoyed socializing with each other and with the volunteers. We also noticed that the break provides the volunteers an opportunity to identify, discuss, and address learning and teaching problems. The class ends at 4:00 PM, usually with suggestions for practice, or with deeper explanations of the material taught.

We remark that practicing in class accounts for most of the time. The role of the instructor is to guide the volunteers and the participants, watch the time, and make sure that all participants receive sufficient attention during practice. By using the convention that everyone stops talking when the instructor calls for attention, we made returning to the demonstrations easier. We found that during demonstrations, if the instructor used the first person (e.g. “now I type” as opposed to “now you type”), then participants were more likely to pay attention, and less

likely to try the example while it was demonstrated.

Also, participants vary radically in their learning abilities, previous knowledge, expectations, and sensorimotor abilities. For example, a few participants had some e-mail experience while others never touched a computer, one woman had extreme vision difficulties, and others had difficulties using the mouse due to arthritis. This made the learning and the teaching processes challenging.

4 Teaching Methodology

In this section we review principles in adult education from Lieb’s paper [3], and describe our teaching methodology.

Malcolm Knowles [5], who pioneered adult learning, identified that as learners, adults are practical and goal oriented. That is, they know what they want to learn and they need to see the value in it. Also, they need to be free to direct themselves, connect the learning to their knowledge and life experience, and be respected for their wealth of knowledge. Thus, effective adult teaching should build trust, acknowledge difficulties, be reasonable about the objectives, and clearly underline their usefulness. To facilitate retention, it should rely on practicing the material in a context that is relevant to the learners.

Our methodology is supported by the above principles. We chose three elements that, in our opinion, facilitate a learning process that engages, builds confidence, and takes into account age and disabilities. These elements are described below.

4.1 Motivation, demonstration, and reinforcement

According to this technique, the instructor motivates the topic, gives a very short demonstration on the data projector, and then allows the participants to practice with the volunteers.

For example, the instructor motivates Google searching by saying “you can find information on the Internet, such as movie listings”. Then the instructor demonstrates how search for the word ‘movies’, click on links, and go back and forth between pages.

Finally, the instructor reiterates what the participants should practice with the volunteers.

We believe that the above sequence makes the learning process easier for seniors because it introduces one new idea at a time, and each demonstration is immediately reinforced with practice.

4.2 Simplicity

According to this principle, the instructor only teaches the essentials, avoiding pitfalls and distractions, and using a simple, non-technical language.

For example, when teaching Google searching the browser is maximized over the screen and the Google web site is displayed. This enables us to avoid potentially confusing and distracting topics such as how to turn on the computer or start up the browser. Similarly, when teaching how to browse, the focus is on how to click on links and go back and forth, rather than explaining what the Internet or a web site is.

We choose simplicity in instruction because we wanted to focus on how to work the Internet, rather than how the Internet works. We remark that during practice the volunteers teach the participants more advanced skills including scrolling, double clicking, and closing windows. Hence, advanced users do not suffer from the simplicity of the instruction.

4.3 Concrete-to-abstract approach

According to this approach, rather than starting with the foundations, the instructor starts with an example, and later addresses issues as they arise naturally.

For example, rather than explaining what the Internet is, the instructor starts the course with the Google web site, and demonstrates how to do a search. The fact that the Internet holds information that can be accessed by using a search engine is implicit in the demonstration. Similarly, the instructor clicks on the search results to show the outcome of the search, but only later explains that those are called links, and that links take us from one web site to another.

Another good example is files and folders. To introduce these abstract concepts, the instructor first shows how to save and attach photos to e-mails using the *My Documents* folder. Only later, when the

question of how to organize photos comes naturally, does the instructor explain that photos are a type of file, and that files can be organized in folders.

We believe that the concrete-to-abstract approach is useful because it provides motivation and context for the material being taught. Also, it is less overwhelming because participants get to practice and become familiar with concepts before these concepts are introduced.

5 Feedback from Participants

At the end of each course we distribute an anonymous questionnaire with a five-point Likert scale and open ended questions. This section summarizes the feedback from the January 2008 offering of the course

Participants reported that they enjoyed the course and the socializing very much, and that it inspired them to learn more about computers. They found Google searching to be the most useful topic, and e-mails to be a little difficult to learn. Only two participants felt that the course was fast paced, but everyone felt that they learned the essentials of browsing and e-mails. They said that the handouts were a very useful reference, and noted that personal attention was vital to the success of the course. They suggested adding a glossary sheet, and starting a more advanced course.

An identical feedback was received in the February and March 2008 offering of the course.

6 Feedback from Volunteers

The Internet Course was planned and taught by the authors of this paper. A total of fifteen computer science students, mostly graduates, helped with the course. Unfortunately, we were not able to carry a precise study of the effect that participating in the course had on the volunteers, but from informal conversations they all expressed enthusiasm about the course and a sense of accomplishment. In addition, we asked the volunteers who never heard about this paper whether they gained anything from the course. We only got the following reply:

The major reason I signed on to help with the Internet Court was to partially satisfy a volunteering requirement for the Student Leadership Certificate Program. A minor reason I signed on was because I really liked the idea of helping the elderly be able to communicate and stay in touch with family and friends. The things I gained were:

1. My volunteering requirement was partially filled. (I had other volunteering commitments to completely satisfy the requirement.)

2. Pleasure and joy from conversing with the elderly. They are full of history and always enjoy sharing it.

3. Satisfaction of helping others learn. When someone says thank you and truly means it, it is always a satisfying feeling. To see the person you have been helping do exactly what you were teaching them without any help, is truly an amazing feeling of fulfillment.

4. Some quick skills and techniques I had not known or thought about before. There are two things that I can think of in particular. The first was being able to increase the size of the screen (Ctrl++). This is especially helpful for people who have vision difficulties. The second thing was the thumbnail view of folders and using that to explain the concepts of saving documents/photos inside folders.

7 Lessons learned

Coordination. Having organized meetings, clear objectives, and good communication between the volunteers played a key role in the success of the planning and the teaching of the Internet Course. Regular reminders, informal atmosphere, paid snacks and an on-campus meeting location helped ensure consistent turnout.

Administration. Since our prospective participants do not know how to use the Internet or e-mail, enrollment requires a full time secretary and a dedicated phone number. The person handling the calls must be able to answer questions about the course. Many participants had difficulties finding the class or parking, and it would be useful to mail them the campus map.

Despite our enrollment criteria, at least one fifth of our participants knew how to send e-mails. Although these participants found the course very beneficial, having a diverse class made the teaching challenging, and advanced users found the first class too easy. Stricter screening criteria may have helped.

Practice. Participants that had no Internet access said that it was hard to retain the material learned. Thus, starting February we allowed participants to practice on their own for twenty minutes before the beginning of the class. At least one volunteer was present to help during this time.

Disabilities. Controlling the mouse was the most prevalent problem and one that significantly impeded the learning process. This problem could be solved with high-end mice and devices such as trackballs, but volunteers must be able to recognize and address it with each participant. We mitigated this issue by relying on the keyboard. For example, after typing a keyword in the Google search box, the instructor used the Enter key instead of clicking on Google search. Similarly, many participants had vision problems, especially adjusting the focus of their eyes while looking at the screen and the keyboard. Using departmental user accounts prevented us from customizing screen and mouse settings.

Some participants were seated in the first row because they could not see what was displayed on the data projector, and even after we enlarged the font they still could not see the display properly. Hearing problems were dealt with by speaking slower and louder.

8 Conclusion

Graduate students gained essential leadership and adult education teaching skills by developing and delivering an outreach project. The project brought senior citizens from the community to the department. Personalized help and practical Internet skills helped these seniors, some of whom never touched a computer, to enjoy the Internet and learn how to use Google searching and Gmail.

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