

INTERNET ACCESS FOR FRAIL SENIORS: *the Connections experience*



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Internet Access For Frail Seniors: the *Connections* Experience

EXECUTIVE SUMMARY

Frail seniors, whether they live at home or in a Seniors' Residence, are at risk of being marginalized. Providing them with access to computers and the Internet can help them narrow the gap between themselves and society, enhancing their self-esteem and reducing social isolation. In addition a computer program promotes mental health by providing the opportunity to learn new information and skills.

Through a project called *Connections*, frail seniors at several Montreal institutions have been given the opportunity to use computers and the Internet. This project, initiated and coordinated by the McGill Centre for Studies in Aging, was funded by Canada's Office of Learning Technologies (HRDC). Computers were installed and made available on a regular basis at five sites: two residences and three day centres. The seniors attending the day centres have limited autonomy because of chronic illness. Eighty-four participants with an average age of 86 took part in an associated research study, to determine their level of interest and the benefits they experienced.

The teaching program began with nine hours of teaching with an experienced teacher. Following this, participants were helped by volunteers. A computer manual was provided. Of the original cohort 81% completed the nine-week course, and after 6 months 53% were still planning to continue computer activities. The personal characteristics of the participants varied widely, but no one factor predicted those who would continue. The most popular activity on the computer was using e-mail to contact distant relatives and friends. In interviews after 6 months computer use, many participants expressed appreciation for their new knowledge and skills, and above all they valued how their experience made them feel more a part of society.

This *Connections* report begins with a rationale for offering a computer program to frail seniors. It then provides a detailed account of the experience in the *Connections* project, with an emphasis on implementation for the benefit of those who may want to consider developing their own computer program in a similar context. The Montreal institutions involved have found that although implementation requires a continuing commitment of resources, the computer program is a great asset since it is so attractive to new clients.

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TABLE OF CONTENTS

INTRODUCTION	1
Why offer a computer program?	1
What will participants learn?	1
How will they benefit?	2
The purpose of this report	2
1. THE CONNECTIONS PROJECT	3
2. THE PARTICIPANTS	3
2.1 Selecting the participants	3
2.2 Participant characteristics	4
3. TEACHING AND LEARNING	4
3.1 Learning program	4
3.2 Barriers to learning	5
3.3 Persistence	6
4. MATERIAL RESOURCES	6
4.1 Location	6
4.2 Hardware	8
4.3 Internet Service	8
4.4 Software	9
4.5 Special adaptations	9
5. HUMAN RESOURCES	10
5.1 Staff Commitment	10
5.2 Volunteers	12
6. DIRECT COSTS	13
7. SUMMARY AND RECOMMENDATIONS	14
Appendix 1.	Table of numbers by site 15 Reasons for leaving the program 15
Appendix 2.	Table of participant characteristics 16
Appendix 3.	Course Outline 17
Appendix 4.	Software adaptations 18
Appendix 5	Sources of additional information 19

Internet Access For Frail Seniors: the *Connections* Experience

INTRODUCTION

Why offer a computer program?

Frail seniors, whether they live at home or in a Seniors' Residence, are at risk of being marginalized. Providing them with access to computers and the Internet can help them narrow the gap between themselves and society, enhancing their self-esteem and reducing social isolation. In addition a computer program promotes mental health by providing the opportunity to learn new information and skills.

Although a few elderly seniors already have some computer experience, for most of them the world of computers and the Internet is a mystery. It confronts them every day in the form of www. Web addresses in the media, and new buzzwords like E-mail. So they appreciate the opportunity to find out what the Internet is all about and are eager to communicate by E-mail. Seniors' Residences and Day Centres will find it is a very attractive addition to their activities programs.

What will participants learn?

In a program developed in Montreal called *Connections*, participants did a variety of activities on the computer. They did basic word-processing, surfed the Net and sent E-mails, each person having a somewhat different experience according to their interests and abilities.

The most popular activity was E-mail. They wrote to friends and relatives (grandchildren, children, nephews and nieces...); some close by in Montreal and others as far away as India and Denmark. In many cases this new way of communicating enabled them to make regular contact with a loved one. And always there was the thrill of showing that they were computer literate and receiving congratulatory replies from their surprised correspondents. For many their first priority in their computer session was to see if they had received any E-mails.

On the Internet, aside from sending E-mail, the most popular thing was reading the news. The home page was a Canadian news site (www.canoe.com). Participants appreciated seeing the headlines, generally more up-to-date than the morning newspaper. Many were immigrants many years ago, and liked to read the newspaper of their country of origin. Other sites that were popular were those related to health issues or those with information about a relative. Some people liked to check the stock market, while others liked cyber-shopping. Sending electronic greeting cards was also popular.

There were some participants who took the opportunity to use WORD to write recollections: memories of their arrival in Canada, a special vacation or other stories of interest to their family. Others enjoyed copy-typing poetry, jokes or quotations. A few undertook projects for their Day Centre such as typing up songs, articles for the newsletter or recipes for the cooking classes. Others wrote letters, which they printed and sent by regular mail.

Some participants loved the games. *Solitaire*, which was introduced for mouse practice, became very popular. *Wheel of Fortune* and *Bridge* were also popular.

How will they benefit?

Using the computer is not only a learning experience, an opportunity to learn new information and keep the mind ticking, it opens a window on the outside world and keeps people connected. The benefits mentioned by *Connections* participants when they were interviewed, fell into six categories. There were many appreciative comments: we give just one example of each:

1. **Feeling a part of society** by understanding computers and not feeling stupid because you think you're out-of-date.
"I think I feel just a little less out of it. I didn't even know the vocabulary. I don't mind being old – but I don't like being so out of touch."
2. **Strengthening social networks** by keeping in touch using E-mail, and making it easier to talk with others.
"I have grandchildren who talk about computers, a grandson who works in computers – and I didn't know anything. Now I can talk to them about computers. We exchange a lot of E-mails and I think that's really neat."
3. **Sense of mastery and increased self-esteem**, knowing that they can do it.
"I wanted to master something and they said I couldn't. I never typed or used a computer in my life. I don't have much schooling. My children didn't think I could do this. I proved them wrong and I'm not finished!"
4. **Mental stimulation and challenge**, the satisfaction of keeping the mind active and problem-solving.
"Oh, it stimulates one! It's very good. Otherwise we'll get fossilized if we don't learn anything new."
5. **Filling a void** by the replacement of former activities with new interests.
"It's helped me a whole lot. It's very boring to be left all alone. When I feel depressed, I sit down at the computer. I'll play patience, bridge, poker."
6. **The joy of learning** and acquiring new knowledge.
"It was all very interesting. It was fun. I accessed the McGill University catalogue."

The purpose of this report

The computer activities of the *Connections* participants and the benefits they reported demonstrate how worthwhile such a program can be for the frail elderly. The report that follows has been written for the benefit of those who may want to consider developing their own computer program in a similar context. We provide information about the participants, and the program implementation, sharing our experience with all aspects of the project.

1. THE CONNECTIONS PROJECT

In the *Connections* project, the opportunity to use computers and the Internet was offered to seniors with limited autonomy, all of whom either attended a Day Centre or lived in Residence. Computers were installed in each location and made available on a regular basis. The program was offered at five Montreal locations:

- Griffith McConnell Residence,
- Henri Bradet Day Centre of the Centre Hospitalier Richardson,
- The Day Centre of the Jewish Nursing Home,
- Place Kensington, and
- St. Margaret Day Centre.

These are all anglophone institutions where the majority of clients are English-speaking.

An important part of the project was a research study with the following aims:

- To examine the feasibility of providing the necessary resources, both human and technical.
- To see who participates.
- To determine how much and for what purpose participants use the computers.
- To examine what psycho-social benefits are experienced by participants.

The Education Task Force of the *McGill Centre for Studies in Aging* developed the project. The main source of funding for the research was a grant from the Federal Government's *Office of Learning Technologies (HRDC)*, while the *McGill Centre for Studies in Aging* provided the equipment and technical resources.

2. THE PARTICIPANTS

2.1 Selecting the participants

When the computer program was introduced, an information meeting was held at each site. Both residences have sections for those who need nursing care, as well as accommodations for those who are relatively autonomous. The program was well publicized ahead of time, mainly to the autonomous residents, by word of mouth, posters and newsletters, and those who were interested attended the information meeting.

At the day centres clients are grouped according to cognitive ability and those in the highest functioning group (mini-mental score of >20) were informed of the opportunity. At two of the day centres all those clients interested attended, while at the third day centre the coordinator invited those who she felt had appropriately high cognitive levels and good memory abilities.

The level of interest varied at each site. (Details of the numbers participating are given in Appendix 1.) Most of those that attended the meeting decided to participate. Most of those who chose not to participate were concerned about a health problem such as poor vision, hearing loss or osteoporosis. Some did not have the confidence because of depression, concerns about short-term memory or fear that they were just too old to learn.

2.2 Participant characteristics

Altogether 84 people participated: 31% were men and 69% women, and they varied in age from 68 to 98, with an average age of 86. Only just over half were born in Canada: they reflect the multicultural background of the west-end Montreal community. Adding to this diversity, participants had a broad spectrum of work and educational experience (see Appendix 2).

Approximately two thirds of the participants lived in residence. Those in residence were on average older than day centre clients: mean of 87 compared to 82 for day centre clients. The day centre clients live at home, almost half living on their own. They attend the day centres because they have limited autonomy due to multiple chronic diseases such as cardio-vascular disease, arthritis or Parkinson's disease. Analysis of the data on personal characteristics found that on average physical health was better for the residents than for those who lived at home. Physical health was measured using the SF12 health score. Regarding mental health there was no significant difference between the two groups.

3. TEACHING AND LEARNING

3.1 Learning program

Each participant had 9 hours of teaching by an experienced teacher. Participants were scheduled in pairs, one at each of 2 computers, for one hour at a regular time each week. The majority of the participants had no prior experience with computers, although a few had computers at home, or had taken a computer workshop. With the exception of two people who were more advanced, they were shown the basics of *WORD*, the Internet and E-mail. A course outline (Appendix 3) was provided for the teachers.

The teachers were able to give everyone an opportunity to use the three main applications; writing in *WORD*, visiting sites on the Web and sending E-mail, but the exact topics taught varied with each participant. In most cases they did not cover everything in the planned course outline. This was mainly because of limited time. Participants had no chance to practice between lessons, making it important to spend time each week recapping and practicing basic skills. Following the first 9 weeks they continued at their assigned hour, with the help of a volunteer.

The volunteers proved to be an essential part of the program. Without them the regularly scheduled computer sessions would be cancelled. A few participants were able to use the computers on their own in between scheduled sessions, but the majority relied on volunteers to remind them about procedures, even when they were doing things they had done many times before.

With the volunteers, participants continued activities they had been doing with the teachers, and pursued their own interests (for further details, see Introduction). The volunteers helped them decide how they would use their allocated time and also introduced them to new things. Surfing the Net was not as popular as anticipated due to limited Internet time (see section 4.3)

In order to have more frequent Internet access, a few participants bought their own computers to use at home or in their residence room. They had help from their families in getting their systems established.

A computer manual with detailed instructions and many screen pictures was prepared and distributed. Participants were encouraged to look at the computer manual between lessons, and almost half (45%) used it. The manual was very helpful to the volunteers, showing clearly what methods had been taught. It was always available for reference beside the computers.

All participants who completed the first nine lessons were awarded a certificate. These were presented at ceremonies at each site. The recognition was appreciated and contributed to participants' feelings of accomplishment. The events were also an opportunity to thank the teachers and volunteers for their efforts.



3.2 Barriers to Learning

Progress varied widely from one person to another. Both teachers and volunteers felt that the problem of remembering procedures from week to week was the biggest barrier to learning. This was compounded by the fact that many participants do everything more slowly than younger people, further limiting what can be accomplished in one hour. The schedule of one hour each week and no practice time, was necessary because of Day Centre and Residence schedules. Then many people missed classes due to sickness and there were holidays and conflicting activities which interfered with the schedule. At one residence they advertised the opportunity for an extra 6 hour course of paid teaching, scheduled over a two-week period, but residents were not willing to pay the required fee.

Most participants did not become self-sufficient in the first 6 months. The majority will probably always want someone at hand to help them, and the establishment of a reliable team of volunteers became a high priority. After 6 months, 65% of those continuing said they still needed at least a little help logging in and out of E-mail, while 24% required help even at the basic level of turning the computer on and off.

A low level of English literacy among some participants was a factor that had not been anticipated. Although everyone had a good understanding of spoken and written English, some people had difficulty writing in English. There were English-speaking people with limited

education, and immigrants, many of whom had not had much opportunity to write in English and had difficulty with spelling. On the one hand this made entering text very slow, but on the other hand, with the help of a volunteer and the “spell-check”, they proudly created good written documents, something they had never been able to do before.

Some participants found they learned the computer more easily than anticipated, but others were frustrated that they were not mastering it as quickly as they had expected. It became clear that the goal of the program should emphasize the opportunity to **use** the computer, rather than giving the impression they would be taught to operate it on their own. However, it was essential to let the participants do all the keystrokes and use the mouse themselves. Stepping in and doing this for them takes away their feeling of achievement and self-esteem, and many stressed this in their interviews.

3.3 Persistence

Of the 84 who started, 68 (81.0%) completed their nine weeks of lessons. After 6 months there were 45 (53.6%) of the original cohort who were still in the program and who planned to continue on a regular basis. For a break down by site see Appendix 1. (At all sites new participants not counted in the study joined the program during the six month period.)

Data analysis failed to identify any specific personal characteristics that would predict which participants would not continue. The people who dropped out did so for several different kinds of reasons, and often people had more than one reason. (see Appendix 1). Many, 31% of the drop-outs interviewed, said that ill health was a factor. Others left because of poor vision. Some didn't like computers. Many felt they had accomplished what they wanted by learning about computers, and didn't really have a practical purpose for continuing. Most of those who did continue had correspondents to E-mail regularly.

The persistence rate was noticeably lower at one residence than it was at the other. Analysis of the research data did not reveal any significant difference between the two groups of participants that might have explained this. However interview conversations indicated that unfulfilled expectations were particularly significant at the residence with the higher drop-out rate.

4. MATERIAL RESOURCES

4.1 Location

One of the first practical considerations when the project started was where the computers could be located. The ideal space would have adequate power outlets and a telephone line, would be well-lit and would have a pleasant ambience. All our sites had no such empty space available, but each was able to come up with their own solution, adapting an existing space.

The Jewish Nursing Home Day Centre use a room previously used by audiologists. They came to an arrangement whereby the room is used for the computer project two days each week. The room is spacious, quiet, and easily accessible because it is located in the Day Centre area. The location works very well.

The Henri Bradet and St. Margaret Day Centres placed the computers at one end of a very large area used for other group activities. This has the advantage of not feeling isolated from the other clients, but is often difficult because of the distraction of hearing the other activities: discussion groups, exercises to music or even an entertainment such as a guitarist or community singing. Conversely, conversations at the computer often disturb the other group, especially if one of the participants is hearing-impaired. At one site a room divider is used to try and improve the situation, but at the other the location near an entrance makes this impossible.

At the Griffith McConnell they use a room that was formerly a resident's room since there was no space available in the activities area. The size of room is appropriate, and large windows give plenty light as well as a magnificent view of the city. However it is on the 6th floor, and some volunteers and teachers, who generally went to the room directly by elevator from the main lobby without meeting anyone, complained they felt isolated there.

At Place Kensington the computers were located in the Art Room. This room is always light and pleasant with an impressive selection of the residents art work on display. Art classes are given only on Thursdays, so it is available for the computer program on all the other days. Sometimes an individual resident will come in and sit quietly and paint while the computer activity is going on. The room is light and situated on the ground floor area where all the other communal activities take place, but the door can be closed to keep out the distracting sounds of other activities, so this arrangement has worked very well.



4.2 Hardware

In raising funds for the *Connections* project, we found it was impossible to get funding for either the purchase of equipment, telephone connections or Internet services. McGill University did provide free Internet service (weekday, day-time only), but otherwise these costs had to be carried by the McGill Centre for Studies in Aging and the individual sites. A donation of 486 computers (8 Meg of RAM and without monitors or CD Roms) was received, but they needed considerable upgrading to get reasonable performance with *Windows 95* and the Internet. The cost of upgrading and purchasing monitors was prohibitive. Instead, the McGill Centre for Studies in Aging purchased more up-to-date computers fully equipped with monitors and CD Roms, getting a good price from the supplier because they were remaining from old inventory.

The computer packages purchased in November 1998 for \$750 were as follows:

- Pentium 133 processor, with 16 Mb RAM, 2 Gb hard drive
- 15" Monitor with VGA card
- Keyboard and mouse
- CD Rom
- Sound card and speakers
- 56K modem

Also included: Windows 95 and Microsoft Office 97

Each site provided the computers tables, extension cords and printers. Two Day Centres purchased specially built tables to accommodate wheelchairs, but the other sites found that standard computer tables were adequate. At each site there was one printer, a *HP DeskJet 695* or comparable model, with a switch for sharing between the two computers. At two sites funds raised at special events were used, and at others printers were donated.

4.3 Internet Service

To keep costs down, only one telephone line was used at each site. Either an existing number and outlet was used, or a new one had to be installed. The cost of installing and paying the monthly charges for a second line was prohibitive (see Section 6). This meant that at any one time only one computer could be using the Internet. Networking the two computers locally to share the line more efficiently was considered, but this would have been even more expensive, requiring the purchase of additional equipment (an ISDN router) and a more expensive ISDN Internet service.

Having only one line really turned out to be a major disadvantage and many participants complained bitterly about it in their interviews. They did not have as much time as they would have liked for doing E-mail. Also, the opportunity to surf the Net was very limited: it takes time to search for information, and further time to read it. For people whose first priority was to E-mail, there was generally no time left for Internet search.

McGill University provided Internet service without charge, with the understanding that it would not be used on evenings or weekends. For most sites this was adequate. At Place Kensington, with a large group of residents participating and difficulties finding enough volunteers during the day on weekdays, they decided to pay for an unlimited service from an Internet Service provider. (At the start of the project, before McGill's service was made available, two of the Day Centres

were able to economize by sharing one paid service because they operate on different days: Monday, Thursday at one Centre and Tuesday, Friday at the other.)

In order for each participant to have their own e-mail address they used the *Microsoft Hotmail* on-line E-mail service. This worked very well. Participants were reassured that their correspondence was confidential, and staff did not have the problem of managing the correspondence files on the computer. A list of the E-mail user names and passwords was kept in a binder in case someone forgot. The biggest disadvantage of using *Hotmail* was that participants had to spend longer on-line, making the half-hour Internet time seem very inadequate. To counter this we encouraged people to write their message in *WORD* and copy it to the *Clipboard*, having it ready to *Paste* into their E-mail later when they signed on to the Internet

4.4 Software

Apart from the *Windows 95 and Microsoft Office* that came with the computer package, only a few other programs were acquired. MacAfee Antivirus software and Y2K upgrades were purchased. Popular (approx. \$10.00) CD's were purchased: an Encyclopedia, Clip Art, crosswords and a selection of games. All of this software was the English version. *RealPlayer* was installed in order to listen to radio and audio files from the Internet.

Freeware available on the Internet required a time commitment from someone, since with our set-up most programs and program updates take from one to several hours to download. With 10 computers in our project, this represented a lot of time and was a problem for keeping the *Microsoft Explorer* and the anti-virus software up-to-date.

4.5 Special adaptations

Almost all participants had diminished visual acuity. Every effort was made to make the screen as clear as possible, to avoid eye-strain. The pointer, icons, tool bars, menus and scroll bar were all made larger, and a plain colour was chosen for the desktop (for details of settings see Appendix 4). No screen saver was used as this was confusing to many. The number of icons on the desktop was kept to a minimum. In addition, a set of large letters for each keyboard was purchased from the Montreal Association for the Blind (\$10.50 per set)

The Internet displays were most tiring on the eyes because they are so complex, with toolbars, advertisements, multiple headings and images. Using *Microsoft Explorer* it was possible to select a larger font size, but then more scrolling is needed and in *Hotmail* messages the lines of text often run off the screen. Our choice of *www.canoe.com* as home page was partly because of the clear bold print and headlines.

Several participants were severely visually impaired. Several participants withdrew because they found their vision too poor to continue. At Place Kensington two residents were able to try out some special software provided by the Montreal Association for the Blind called *ZoomExtra*. This software enlarges the entire display, showing one part at a time; the mouse is used to move from one area of the display to another. The users found it confusing and preferred to write in *WORD* using a very large font size. Intensive training, more than was possible with this project, would be needed to take advantage of *ZoomExtra*.

The first skill everyone had to master was controlling the mouse. People in any age group take a while to master this, but arthritic fingers make it harder to differentiate between fingers on the left and right mouse keys and the double click is particularly hard. We changed the mouse setting so that programs opened with a single instead of a double click, and this made it much easier for everyone (see Appendix 4). Also “Dragging” was difficult for participants to control, so we decided to show this method as little as possible, opting for alternative keystroke methods. With these adjustments, in time everyone was able to master the mouse for “pointing and clicking”, except for one or two with severe hand disabilities. An early attempt to teach an alternative method using key combinations (e.g. the <ALT> key combinations for menus) was abandoned; it required two hands and more things to remember, so participants preferred the mouse.

The only other adaptation that was made was for a participant who could not type with either hand. The teacher constructed an adapter connected to the cursor control keys which she used with her fist to control the pointer, and to write text she pressed keys with the eraser on the end of a pencil. This was working well, but unfortunately the participant was only in the program for a few weeks, before withdrawing for reasons unrelated to her handicap.

In view of the difficulties many participants had in mastering use of the mouse, and the overall popularity of E-mail, at any future sites consideration should be given to using the latest developments in WebTV, rather than computers. The wire-less keyboard (no need for a mouse) and uncluttered screen display are definitely an advantage. On the other hand, at the present time, the functions available are limited to E-mail and Internet search, and the screen has poorer definition than a computer screen. Currently, costs may not be less than a computer set-up, especially if a printer and TV screen have to be purchased.

5. HUMAN RESOURCES

5.1 Staff Commitment

At each site one of the Activities staff took a responsibility for coordinating the computer program (for this document we will call this person the Site Coordinator). Initially this involved informing clients about the program, and arranging for space and computer tables to be made available. In the case of the *Connections* project, the computer purchase and installation was done by the Project Coordinator, but at another site this would have to be taken on, or at least arranged, by the Site Coordinator.

Once the program started, the Site Coordinator made the participant schedule and kept it up-to-date, making sure that everyone had their turn and that when clients were absent (generally due to medical appointments or sickness) others could take their place. This could be quite time-consuming in the residences. They also had to maintain supplies such as printer paper and computer manuals.

It was a great advantage to have a Site Coordinator who was computer literate who could understand and deal with any computer problems that arose, not necessarily to fix all problems themselves, but just to have judgement about whether a problem was major or minor, and when it needed to be referred to a technician. In the *Connections* project, most, though not all, of these problems occurred at time of installation, and they were generally dealt with by the Project

Coordinator. There was also a need for someone to keep the virus protection software up-to-date by downloading from the Internet.

At two of the sites, one residence and one day centre, the Site Coordinator actually took one of the scheduled time periods and worked with the participants. This is highly recommended, as the Site Coordinator then understands first hand the learning experience of the participants and is also very familiar with how the computers and Internet are functioning. Unfortunately at the other three sites the Site Coordinators' schedules were too busy to be able to incorporate a computer session.

At several sites the staff person taking on the computer responsibility was able to spend time improving their computer skills in order to take on the project. They considered this a benefit and welcomed the opportunity.

Finally there was a need for the Site Coordinator to make time for communication with the teachers and volunteers. It proved to be very important to orient new volunteers and keep in touch with how they are doing. They may have concerns and valuable observations to share. They also need to be informed of days when there would be no computer program because of a holiday or conflicting activity, and they should be keeping in contact themselves to let the staff know if they cannot come next time.

In spite of the time commitment involved, coordinators found the computers a very valuable activity to offer in their program. At the day centres, clients attend more regularly because they don't want to miss their computer time. At day centres and residences the computers have proved to be an attraction for new clients and their families.



5.2 Volunteers

The *Connections* volunteers varied considerably in age and interests. There were students with time available in the Summer or between classes, new immigrants looking for an opportunity to practice job-related skills, and others not working because they were retired or looking after young children. At one residence weekend hours were scheduled and the volunteers had full-time jobs. One volunteer was a resident with computer experience helping other residents. What all the volunteers had in common was a strong desire to help others.

When asked what was most rewarding about their experience, about half the volunteers reported the satisfaction of seeing the participants' pleasure and excitement and watching them progress. One put it this way:

“to see that special interest in their eyes or smiles, as if they achieved a landing on the moon”.

For many volunteers their primary satisfaction was getting to know the people with whom they worked:

“meeting the participants every week, the relationship we built over the weeks and the personal enrichment from listening to their unique life stories”.

By scheduling the volunteers on the same regular basis as the participants, they generally met the same people each week, creating friendships valued by both parties.

We were able to recruit some wonderful, committed volunteers, but getting enough people who could commit for the long term was difficult. Many volunteers were seeking employment and were no longer available when they found work. Students stopped volunteering when classes resumed or their school schedule changed. Those that stayed the longest were those who had flexible hours, because they were either self-employed or retired. Several volunteers already had a commitment to the institution through previous volunteer work and they proved to be among those who continued the longest.

Early in the *Connections* project a request for volunteers was listed with the Montreal Volunteer Bureau. This has been an excellent source of volunteers. Later a campaign was organized, sending releases to newspapers, and posters to colleges, universities and seniors organizations. Also letters were sent to coordinators of various college Applied Social Service programs, asking if students could use this as work experience for their program. No-one did volunteer as work experience for their program, but the posters and media releases were successful, bringing in a number of volunteers. Most volunteers were dependent on public transportation, making it more difficult to recruit for the sites with locations furthest from the *Metro*.

A set of volunteer instructions was developed for each site and is issued to new volunteers. The manual describes what is expected of them, offers tips on dealing with clients, and provides important logistics about the site where they are volunteering and how and when to get in touch with the Site Coordinator.

At most of the sites there is a volunteer coordinator for the institution and volunteers registered officially as an institutional volunteer and signed in for the hours they volunteered. This way

they were eligible for recognition of the volunteer hours served. They were also assured they would receive a letter of recommendation after three months of service. So that they could be publicly acknowledged and thanked for their contribution, they were invited to the special events held for the presentation of certificates to the participants.

6. DIRECT COSTS

Based on the *Connections experience* the direct costs of introducing a computer program are mainly the cost of the equipment and network services. The following were approximate costs per site for a 12 month period:

2 computer packages @ \$750.00	\$1,500.00
2 computer desks @ \$100.00	200.00
Printer and switch	350.00
Telephone installation	250.00
Telephone service	220.00
Network service	200.00
Supplies: paper, printing	50.00
Software, diskettes	60.00
<hr/> TOTAL	<hr/> \$2,830.00

The above does not include teaching and computer service expenses, or indirect costs such as staff time. Some sites did not incur all the costs listed; for example in some cases the telephone line already existed, and in others the printer was donated.

In order to give the reader a realistic estimate of the costs likely to be incurred for a similar program elsewhere, the cost of the network service is included even though for our project McGill provided it free. Ideally, as mentioned earlier, it should be possible to have both computers on-line at the same time. This would double the cost of the telephones and Internet service: an additional \$670.00.

Teachers were hired for the Connections project at \$20 per hour. Since participants were paired and given 9 hours with a paid teacher, the cost per participant for was \$90. It would be possible to have all the teaching done entirely by volunteers, and a few new participants joined in the *Connections* program this way after the project was well underway (they are not part of the research cohort). However, for the initial teaching sessions it would be preferable to use only experienced people, who have a clear understanding of the clientele, their goals and expectations.

7. SUMMARY AND RECOMMENDATIONS

The *Connections* project demonstrated that providing access to computers and the Internet at seniors' Residences and Day Centres, is a way to keep frail elderly learning and in contact with the outside world. Those who participate experience enhanced self-esteem through keeping up with technology, feel more connected with society and take pride in their achievements. Institutions involved in this Montreal project have found that although implementation requires a continuing commitment of resources, the computer program is a great asset since it is so attractive to their clients.

The following recommendations are made for those who plan to introduce a computer program in a similar context:

Recommendation 1

It is important to set realistic expectations regarding what participants will learn, so they will not be disappointed. They should be told that since they will be getting only limited computer time, they will not be expected to learn enough to operate entirely on their own. Rather they will have the opportunity to use computers and the Internet, develop some basic skills, and gain an understanding of what this technology offers.

Recommendation 2

Keep instruction simple, concentrating on basic procedures and techniques, repeating them often, and allowing the participants to do as much as possible for themselves. This approach gives them a better chance to learn and remember basic skills, thus building their self-confidence. Showing too many applications, rather than stimulating their interest, can lead to confusion and frustration.

Recommendation 3

All computer activity should always be with only one participant at each computer, so that everyone can have hands-on experience and see the screen properly. Volunteers will generally be able to help only two, and sometimes only one person at a time.

Recommendation 4

The program coordinator, or delegated staff person, should schedule time to be actively involved in the activities. Adequate computer skills will be needed, or at least access to someone with computer knowledge.

Recommendation 5

Before launching the program, a plan should be made for ongoing recruiting and training of a team of volunteers who will be prepared to come regularly to support the participants while they use the computers.

Recommendation 6

E-mail is likely to be the most popular activity. If it can possibly be managed, it is worth the extra cost in a situation with two computers to have two telephone lines and computer services so that participants can spend all the available time on the Internet.

Recommendation 7

Most participants will find that reading the computer screen is hard on their eyes. Adjustments should be made to the computer set up to make the screen images larger than the usual default size wherever possible.

APPENDIX 1

PARTICIPANT NUMBERS BY SITE

Participants	Henri Bradet Day Centre	Jewish Nursing Home Day Centre	St. Margaret Day Centre	Griffith McConnell Residence	Place Kensington	TOTAL	
Total population at site	38	59	18	84	165	165	
Began program	10	9	13	17	35	84	(100.0%)
Completed 9 weeks	9	8	11	11	29	68	(81.0%)
Continuing at 6 months	7	7	5	5	23	47	(56.0%)
Plan to continue	7	6	5	4	23	45	(53.6%)

REASONS FOR LEAVING THE PROGRAM

In the post-test, given after 6 months, 68 (80.9%) of the participants were interviewed. Most of the remaining 16 participants were unavailable for health reasons, but three had died and there were several scheduling problems.

The 29 people interviewed who were no longer continuing gave their reasons for leaving the program, and these are shown in the table below (many participants gave multiple reasons).

Reason for Leaving	Number	% of those who left
Goal achieved after first 9 weeks / Didn't have a purpose to continue	11	(37.9%)
Health reasons	9	(31.0%)
Disability – Poor Vision	4	(13.8%)
Too difficult: memory / couldn't learn well enough	4	(13.8%)
Tried it and didn't like computers	3	(10.7%)
Other	11	(37.9%)

APPENDIX 2:

PARTICIPANT PERSONAL CHARACTERISTICS

Characteristic	No.	Percent.	Characteristic	No.	Percent.
Gender					
Female	58	69.0%			
Male	26	31.0%			
Age			Highest Level of Education		
65-69	2	2.4%	Primary School	17	20.2%
70-74	3	3.6%	Secondary School	34	40.5%
75-79	9	10.7%	College	7	8.3%
80-84	20	23.8%	University: Bachelor	9	10.7%
85-89	26	31%	University: Masters	9	10.7%
90-94	17	20.2%	University: Ph.D	2	2.4%
95-99	7	8.3%	Technical Diploma	2	2.4%
			Other	4	4.8%
First Language			Prior Occupation		
English	52	61.9%	Executive	3	3.6%
French	8	9.5%	Professional	17	20.2%
Yiddish	7	8.3%	Para-professional	16	19.0%
German	6	7.1%	Managerial, Sales	12	14.3%
Other	9	10.7%	Clerical, Secretarial	15	17.9%
Unknown	2	2.4%	Skilled blue collar, Service	4	4.8%
			Non-specialized blue collar	2	2.4%
Country of Origin			Homemaker	12	14.3%
Canada	55	65.5%	Other	2	2.4%
Poland	5	6.0%	Unknown	1	1.2%
U.S.A.	6	7.1%			
U.K.	3	3.6%			
Other	15	17.9%			

APPENDIX 3

COURSE OUTLINE

- Lesson 1** Introduction to hardware
Goals of course, including demo of Internet
Use of Mouse – Solitaire
- Lesson 2** Switching on and off
The keyboard
Entering text in *WORD*
Exiting *WORD* from the Eile menu
- Lesson 3** Editing text
The Standard Tool Bar: Print, Preview, Undo
Folders and drives
Opening and Saving a document
- Lesson 4** Review
- Lesson 5** Selecting text
Cut, Copy, Paste
- Lesson 6** The Internet
Dialing in
Internet terminology
Searching the Web
Windows buttons and scroll bars
- Lesson 7** E-mail
Registering with *Hotmail*
Sending a letter on *Hotmail*
- Lesson 8** Logging in to *Hotmail*
Reading mail
The address book
Hotmail help
- Lesson 9** Internet Toolbar: Favorites, Fonts, History...
Signing up for an e-mail list

APPENDIX 4: RECOMMENDED SOFTWARE ADAPTATIONS

ADAPTATIONS FOR CLEARER DISPLAY

1. **WINDOWS 95**

From the **Start** menu, under **Settings, Control Panel** and selecting **Display**:

In the **Settings** folder: set the **Display area** pointer at minimum: Desktop Area 640 x 480
This makes the icons on the desktop as large as possible.

In the **Appearance** folder, for selected **Items**, make the following changes to the default:
(These settings make the windows, menus and scrollbar more visible.)

Active Title Bar	Size 22	Font: 12pt, Bold
Icon	Size 32	Font: 10pt, Bold
Menu	Size 22	Font: 12pt, Bold, Arial
Scrollbar	Size 22	
Selected Items	Size 18	Font: 10pt, Bold

We found the **Accessibility Properties, Display** option offered for people with disabilities (under the **Windows 95 Settings, Control Panel**) was unnecessarily high contrast for most participants, and reduced the amount of screen for display of content. However this display can be accessed with hot keys for individual users who need it.

2. **WORD**

Set the toolbars larger using:

View, Toolbars, Customize, Options, and selecting **Large Icons**

In this project we arranged for **WORD** to open showing only 2 toolbars, **Standard** and **Formatting**, and no ruler.

We kept the default font larger at 14pt. This can be set using:

Format, Font, selecting **Size, 14pt.** and clicking the **<Default>** button in the window.

Unfortunately the **WORD** settings were difficult to maintain; the toolbars generally remained large, but the font size often reverted to 10pt, generally due to users opening and closing **WORD** incorrectly. Customized toolbar settings frequently changed because **WORD** opens with the **View** setting used most recently, and some participants had been using other toolbars.

3. **Larger Pointer**

To make the pointer larger, from the **Start** menu, under **Settings, Control Panel** and selecting **Mouse**: in the **Pointers** folder, change the **Scheme** from **Windows Standard** to **Windows Standard (extra large)**.

MOUSE ADAPTATION

To change from double to single click for opening programs:

From the **Start** menu, under **Settings, Folder Options**, select **Customized Desktop**, then click the **<Settings>** button and choose **Use Windows Classic Desktop** and **Single Click**.

APPENDIX 5: SOURCES OF ADDITIONAL INFORMATION

This report and other documents relating to the project are available for downloading from the website of the *McGill Centre for Studies in Aging*: **www.mcgill.ca/mcsa**. The following documents are available:

Connections: Volunteer Handbook*

Connections: Computer Instructions*

Internet Access for Frail Seniors: the *Connections* experience*

Connections: Internet Access for Frail Older Seniors to Improve their

Psychosocial Well-Being. (*Report to OLT, with a focus on research*).

* French versions of these documents are available.

Documents can be ordered by mail by contacting the *McGill Centre for Studies in Aging*: **tel: 766-2010, fax. 888-4050, or e-mail: mcmu@musica.mcgill.ca**.

If you wish to speak to one of the site coordinators regarding their experience with the *Connections* project you may contact one of the following:

Mona Beck, Centre Henri Bradet tel. (514) 483-1380 loc. 2003

Andrea Lozoff, Griffith McConnell Residence tel. (514) 482-0590

If you wish to discuss other aspects of the project you may contact the project coordinator, Fiona Clark, tel. (514) 487-5127 or e-mail: cxfc@musica.mcgill.ca.

The OLT web site is: <http://olt-bta.hrdc-drhc.gc.ca>