

Supernet: Introducing Computers to the Elderly

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ABSTRACT

This paper presents the development of Supernet, a free course designed to educate senior citizens in introductory-level computing.

The paper first reviews some of the pertinent issues in teaching computing to the elderly as covered in the literature. The paper then highlights the unique style of curriculum and delivery used by Supernet designed to enable effective learning by elderly students with a wide range of interests and abilities. Also discussed is the initial motivation for Supernet, the course structure, course topics covered and other areas currently under development.

Keywords

Computing for seniors, computer education

1. INTRODUCTION

Methodist City Action, the social service outreach of Hamilton Methodist Parish has a strong focus on the use of technology for an inclusive society, where all members have access to and can use ICT (Information and Communication Technology) confidently and competently to enhance the quality of all aspects of their lives to realise their social, cultural and economic ambitions. Within this vision, our new computer project, Supernet, has taken shape and is now well underway.

The Supernet program is free and open for older New Zealanders. It is an opportunity for older people to learn and use computers. It is run in a very relaxed environment. The entire program is run by volunteers who are a mix of older New Zealanders themselves, tertiary students and polytechnic (Wintec) tutors.

2. MOTIVATION

Methodist City Action (hereafter referred to as “MCA”) was made aware of the need for a computing course when they were constantly approached by elderly people in the Hamilton parish, seeking aid in various aspects of computing. These people had a wide range of skills and questions. Some of these people were reasonably computer-literate, and merely needed some help with specific issues. Others had been given a computer by their grown-up children and had no idea how to use it. Many of these people had relatives who were well-versed in basic computing but simply did not have the time, patience or ability to sit down and teach them what they required. There are various resources available to teach elderly people basic computing skills, including books, Internet websites, general courses offered by various institutes and even courses specifically geared towards senior citizens such as SeniorNet.

These options, while good, do not address the needs of everyone. Some people do not have the funds or time to go through the full SeniorNet course. Books and the Internet are good, but lack certain things that elderly need especially when just beginning such as encouragement, explanation of technical terms, repetition, visual instruction and guidance, etc.

MCA have on their premises a 15-PC computer lab with teaching facilities which was underutilised. They wished to provide a free service for these elderly people by offering a beginning computer course.



3. LITERATURE REVIEW

Before going into the details of the course it would be useful to first identify some of the key issues that impact on structure, presentation and teaching of the Supernet course.

Elderly people who wish to learn computers are considered to be “adult learners” so much of the theory of adult teaching and learning becomes very relevant to the Supernet tutors. Let’s first identify how elderly people view themselves in a student role.

Bean (2003) and Cornett (2005) outline that the elderly view themselves as “mature, independent people, capable of self-direction” (Cornett, 2005). They like to be in charge of their learning. They agree that the elderly “seek to learn what is relevant to their lives” (Bean, 2003). This also applies to elderly that come to learn computers.

In addition to the more general adult learner perception outlined above, the elderly may have certain physical issues relating to their visual, auditory and psychomotor abilities. There are some interesting points raised about these physical issues and solutions to aid in elderly learning. For example it has been observed that a font between 12-14 (Bean 2003, Zhao 2001, Cornett 2005) with a simple font style is ideal. A background with minimal distracting images and lots of white space is effective when creating instructional material (Hawthorn 2001, Zhao 2001).

Aside from these physical issues, there are mental issues relating to processing speed, attention, memory and psychological barriers that need to be addressed. To be more specific, age affects the “ability to focus on the task at hand” (Bean, 2003), and to identify relevant information in new material. It also becomes hard to make new associations, for example identifying icons for different applications. There is difficulty in carrying out multiple tasks simultaneously. It also becomes more difficult to retain things in short term memory, but research has shown high levels of performance in cued recall (Hawthorn, 2001).

It is important to simplify the tasks presented to elderly people. This is addressed by Hawthorn (2001), his research on interface design for elder people is somewhat relevant in the layout of instructional material for the elderly. Bean (2003)

agrees that it is important to simplify instructions and concepts as much as possible. Bean (2003) emphasises that “the lack of adequate printed instruction is a major inhibitor to seniors learning to use computers” as well as the need for both verbal and written instruction.

It can be concluded that clearly laid out instructional material, simple terminology are effective for elderly when learning computers (Hawthorn, 2001). In addition teaching the elderly requires time, patience and repetition of new concepts (Cornett 2005, Bean 2003).

The final aspect is psychological issues that may affect elderly students. As Cornett correctly mentions elderly people may find themselves in the situation where they had lost their former status, family/spouse or had a decline in their economic/financial situation. These combined with the decline in physical and mental disabilities can result in poor self-esteem (Cornett, 2005) may inhibit learning.

To help with psychological issues, a friendly, non-threatening learning environment should be provided with individual attention, clear verbal instructions, patience and understanding. Also it is important to set goals that are realistic and achievable as “Successfully attaining short-term goals generates motivation!” (Cornett, 2005). If goals are set too high it can lead to feelings of frustration.

4. SUPERNET DESIGN

In this section we will describe how we designed the course, and identify certain aspects pertaining to teaching the elderly.

Having identified the need for this course, MCA advertised for “computer champions” to volunteer to help with the design and delivery of this course. Roughly eight people responded initially including the authors of this paper. We met on a weekly basis to discuss ways and means.

Because of the wide range of interests and abilities of our prospective student body, it was decided to construct the curriculum as a kind of “smorgasbord”, with a set of exercises designed to introduce a range of topics. Thus students are in charge of their learning. They decide on the content and time taken on all or some of the modules. The modules they can choose from

include:

- Basics of computing
- Word processing (x3)
- Surfing the Internet
- Email
- Genealogy software

In the end, the Genealogy lesson was not implemented, but several more topics were added due to demand:

- Spreadsheets
- Uploading, editing, and printing photos from a digital camera
- Making a greeting card using Microsoft Publisher

The course material was written by the tutors. Photocopies of the exercises would be made available to students in class. A master copy would also be included so that tutors could mark any corrections or modifications that needed to be made.

This was the initial design. During the delivery of the course during the second half of the year in 2004, several changes were made. The tutors involved met on a regular basis, and made adjustments as required.

Between meetings, to maintain communication a Bulletin Board was set up on the Internet to allow tutors to discuss problems that arose and propose solutions. The course was advertised in a number of newspapers and churches throughout Hamilton.

5. SUPERNET COURSE DELIVERY

For various practical reasons, the course was timed to conform to the school term. Students would enrol for a 10-week block. If they wanted more they could then enrol for another 10 weeks.

The class structure was simple: students would arrive for class, choose an exercise on a topic they were interested in and then work through the exercise in class. Tutors were available to help with any questions. In this way, tutors acted more as a facilitator than a teacher. Students were also free to take copies of the exercises home with them to do on their own time

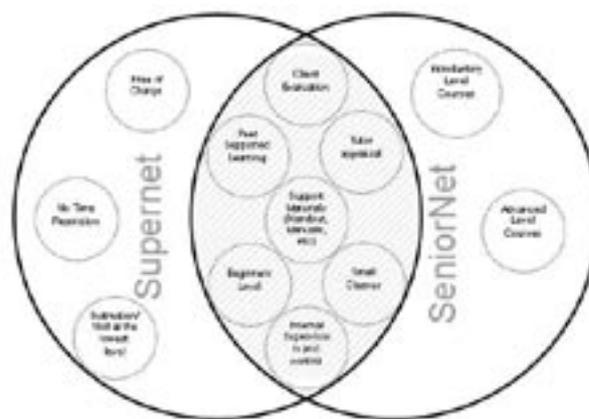


Figure 1. A graphical comparison between Supernet and SeniorNet classes.

or use as a reference.

During the course, it was determined that a little more structure was required by some students. To this end, a chart of each student and a list of available courses was created. As students completed a module, that module would be “ticked off” on the chart. This not only gave the students a sense of satisfaction, but proved beneficial also because some students could not remember which modules they had done from one week to the next. No marking or grades were kept, though tutors were available to check student work if requested.

About halfway through a 10-week session, students were given an evaluation form, where they can rate and comment on the course and tutor. This was reviewed in tutor meetings and changes were implemented.

6. LINKS WITH INDUSTRY AND OTHER INSTITUTIONS

One of the most often-requested topics was help with using a digital camera. To this end, we had a staff member from a local camera shop come and give a lecture. This proved very interesting and beneficial, not only for the students but for the tutors as well!

In designing the course, we did not wish to compete with SeniorNet, a popular course for senior citizens. Therefore, we worked with SeniorNet in the design of our course, aiming primarily at the beginners who would not have had the skills to start SeniorNet. Thus we aimed to fill a niche (see Figure 1).

7. EVALUATION

The “smorgasbord” approach seemed to work quite well. It allowed students to concentrate on topics they were interested in. Some students had other things they wished to do, such as formatting a specific document, setting up a mailing list, or simply surfing the web. In the Supernet classes, they were able to do these things with a tutor nearby to help if they had problems.

Other students literally did not have the faintest idea how to begin. Using the mouse was strange, and seemed all but impossible. For these students, the free structure of the course enabled tutors to set up activities to give them practice pointing, clicking, and dragging with the mouse. Simply having them play solitaire proved ideal for this purpose. A few students required more structure. They would show up week after week determined to accomplish something, and yet they would end up just poking around the windows on the system or browsing the Internet. These students often went away feeling less than completely satisfied.

On the whole, however, it was discovered that the most important facet of teaching the elderly is patience and empathy. Due to their attenuated abilities and that computers are very different from what they’ve encountered before in their lives, they tend to have trouble constructing a mental model of how the computer works. To overcome this requires infinite patience on the part of the tutor. However, it’s worth it because they get there eventually, and they are most grateful!

One other facet of Supernet is that several tutors were recent tertiary graduates, and one or two had little or no work experience of any kind. For these people, being a tutor in Supernet provided valuable work experience for them to include on their resumes.

8. FUTURE WORK

Probably the most glaring problem was the lack of a structured curriculum for students who needed it. To this end, we are designing a more formalized curriculum consisting of basic computer skills in a number of areas. On completion of the topics involved, the student would be issued a Supernet Certificate of Achievement.

This certificate would not have any commercially recognized value, but would:

- Provide the students with a goal/motivation to shoot for.
- Indicate student level/ability for student and tutor information.
- Signify that they are ready to move on to SeniorNet.

To aid inexperienced volunteer tutors, MCA will offer to send them on an adult teaching course such as the “Certificate of Adult Teaching” course at Wintec.

9. CONCLUSION

Supernet provides a service that we believe is unique. It is a free course designed for the elderly with absolutely no computing experience. Because of the wide range of abilities and interests a “smorgasbord” teaching style was adapted for the lessons. It also provided valuable experience for young people who needed something to put on their resume.

Because of the pioneering aspect of the course, it is still very much under development, an “evolutionary prototype” if you will. In the future we intend to provide a more structured curriculum in addition to the smorgasbord, with a certificate of achievement for students who complete the requirements.

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