

Bridging the divide: older learners and new technologies

ICT and older learners: strategies and case studies

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Abstract

In 2003 and 2004 as part of the ANTA funded Adult Literacy Innovative Projects AMES Research and Learning Innovation conducted research into strategies for the successful engagement of older learners in Information and Communication Technology (ICT) learning.

This paper presents a summary of the findings of that research - strategies for the successful engagement and retention of older learners (those aged 45 years and over) in ICT learning and potential barriers which can prevent these learners from engaging with and benefiting from learning in general and ICT programs in particular. It presents case studies of four very different, highly successful, approaches to ICT learning for older learners. Using data from the case studies the paper provides an overview of:

- the ‘older learner’ profile
- a profile of the skills, experience and attitudes that are characteristic of teachers/trainers working successfully with older learners and ICT
- the “top ten” strategies for creating an effective learning experience for older learners.

The research and this paper address both teachers/trainers and program coordinators involved in the planning and delivery of ICT programs for older learners. From the teacher/trainer’s perspective the findings will inform teaching practice and from the perspective of program coordinators the research can be used to inform program planning as well as staff development programs.

Methodologies

A number of approaches were used in this study:

- a review of national and international research into older learners and strategies that support acquisition of ICT skills
- a field survey of older learners engaged in a range of ICT training contexts
The survey involved 50 learners engaged in formal and informal training in a range of settings in Victoria, Tasmania and South Australia.
- interviews with teachers, trainers and program coordinators involved in the planning and delivery of ICT programs to older learners in both formal and informal settings in Victoria, Tasmania and South Australia.
- case studies at four different training sites involving 78 learners in all, and five teachers, three of them also program coordinators.

Findings and discussion

The data collected in the study from learners, teachers/trainers and program coordinators contains some consistent messages in terms of the development of ICT literacy for older learners and factors which can be barriers to learning in general, and ICT in particular, for this group of learners.

Older learners

The learners involved in the field surveys ranged in age from the 40 – 45 age group to learners 65 years and over. The majority was aged between 46 – 60 years. Many, but certainly not all, of these were seeking employment and a relatively small number were employed.

Just over 60% of the learners surveyed were in training locations in metropolitan Victoria, 32% in regional Tasmania and 6.5% in rural South Australia.

Just under 60% had secondary school or higher qualifications. 6% completed University degrees, 23% had a Vocational and Educational Training qualification. Less than half (44%) did not complete secondary school. 18% had completed non-accredited training courses.

Only 5% of the learners involved in the study were employed - 2.5% in full-time employment and same percentage in part-time employment and around 15% of the sample group was retired. While 20% was employed or retired, only 50% of the group classified themselves as unemployed. It is interesting to note the just over 30% of the sample group was engaged in *voluntary* work and therefore may not have considered themselves to be unemployed. A total of 60% of the sample was seeking to re-enter the workforce – either part-time or full-time.

77% of the learners came from English Speaking Backgrounds (ESB). The 23% from Non-English Speaking Backgrounds (NESB) were from 12 different language backgrounds. As might be expected 60% of the learners had high oracy and high literacy levels. 40%, which includes nearly 20% of the ESB learners, had lower literacy levels (38% intermediate literacy and 1.3% low literacy).

On the whole these learners had little previous experience with ICT. 55% had no ICT skills, 25% had basic skills, 16% had intermediate level ICT skills and 4% were advanced ICT users.

The overall picture is one of generally independent learners who have decided that ICT can help them meet a purpose, achieve a goal or in some other way enrich their lives, and, often, the lives of others in their personal circles or wider communities. They have a clear sense of their own purpose for acquiring new skills. The barriers to learning are largely those faced by all adult learners, compounded by the factor of being part of a generation that has not grown up with computer technology.

Teacher profile

The teachers/trainers interviewed for this study shared many common characteristics. They were all very passionate about their subject, were interested in the possibilities of ICT and the personal and employment-related opportunities it presents for older learners, and delivered their programs in a spirit of respect for the learners and enjoyment of the teaching and learning process. They were all able to adapt to the needs of the learners as well as the demands of formal and informal teaching and learning situations and program funding requirements.

Significantly, four of the five teachers/trainers had an extensive background in adult language and literacy teaching, and were therefore experienced in teaching literacy and communication skills as well as having underpinning knowledge of the social nature of learning. The combination of highly developed computing skills and knowledge and experience in language and literacy teaching methodology made these teachers highly effective in teaching ICT literacy.

The teachers/trainers were all actively engaged in a learner-centered approach based on adult learning principles as described by Knowles (1980, 1984). Underpinning principles include:

- adults tend to be self-directing
- adults have a rich reservoir of experience that can serve as a resource for learning
- since adults' readiness to learn is frequently affected by their need to know or do something, they tend to have a life-, task-, or problem-centered orientation to learning as opposed to a subject-matter orientation
- adults are generally motivated to learn due to internal or intrinsic factors (such as helping their child with homework) as opposed to external or extrinsic forces (such as a raise in salary).

Creating an effective learning experience for older learners.

The learners in the field surveys were asked to identify the strategies that made learning a positive experience and helped them to achieve the outcomes they were seeking. In order of priority the learners identified the following as factors in a positive learning experience:

1. peer support, mentoring and tutoring
2. the teacher/trainer; including tutors and volunteers
3. slower paced, low intensity training
4. self-paced learning

5. informal learning environment
6. small classes or groups
7. clear and explicit visual instructions
8. similar aged cohort

Other factors contributing to a positive learning experience included:

- English language literacy integrated with ICT literacy skills development (for NESB learners)
- personal interest
- potential employment outcomes
- good print resources
- ongoing (lifelong learning)
- hands on practice activities
- relevant "real world" activities

Potential barriers to learning

Learners were also asked to comment on any barriers to learning that they could identify. Commonly identified barriers included:

Age-related barriers

- print size - accessibility of print resources (a preferred learning strategy);
- small size of text in web address bar that cannot be changed
- focus - changing focus from screen to workbook to keyboard
- pace - time limits on training courses, and sessions that move too quickly can be stressful

English language literacy (for NESB learners)

Computer literacy:

- computer terminology
- computer skills

Physical set-up of computer rooms – ability to see projected demonstration.

Formal training programs

Many of this cohort are very self-directed and independent, therefore more formal 'teacher structured' training programs are, by their nature, a barrier to learning.

Skills level too high

If the skill level of formal programs is too high for these learners they will drop out.

Practical strategies for engaging and supporting older learners

Some of the practical strategies for successfully engaging older learners with ICT identified by both the teachers and the learners involved in the study are presented in the following tables.

Computer equipment & terminology

Strategy	Why this helps
Use a data projector	<p>Visual demonstration supports the learning style of many older learners</p> <ul style="list-style-type: none"> - immediacy of instruction – “watch and see how it’s done” - supports low language and/or literacy levels - supports learners with sight impairments
Provide a well equipped and managed computer room	Learners can be frustrated and disheartened when “the computer doesn’t work”. Often they think this is their fault. Good, reliable computing equipment, access to networks and the Internet are all essential, not only for access but also to maintain confidence.
Make computers available outside of regular session times	Learners need and appreciate the opportunities to practise their skills outside of ‘class’ time.
Demonstrate self help strategies early on in the course	Demystify the hardware and show learners that they cannot easily break anything eg switching off and resetting the computer is often a simple solution.
Use everyday metaphors to demystify computer concepts	Learners need to know that there is nothing wrong in not knowing how a computer works, eg: “you don’t need to know how to drop in a carburetor in order to drive a car.”

Pace and intensity

Strategy	Why this helps
Introduce new concepts through a carefully managed set of steps	Many learners have not been engaged in formal ICT learning before, and this is a ‘new (and unfamiliar) literacy’ for most of them.
Present new skills in small ‘chunks’	Small steps allow time for learners to take in the new and help them process and understand the new information.
Reinforce skills from one week to the next	This helps learners make the connections by applying and practising skills they have learned previously.
Be patient	Older learners often need more time and more repetition before they fully ‘own’ the new information/skill.
Avoid the temptation of ‘taking over’ the mouse	This is counterproductive with learners who often lack confidence already and need to ‘do it themselves’.

Supporting disadvantaged learners – literacy and age-related issues

Strategy	Why this helps
<p>Assess learners to determine skill levels before they start a program and group learners with similar level skills</p>	<p>Pace is a key factor for older learners - teaching ICT literacy to older learners may require time and patience. Time available to deliver a program can sometimes become an issue and this in turn can affect the pace of sessions or intensity of a program. This may disadvantage any learners with lower skill levels.</p>
<p>Use volunteer helpers in the class</p>	<p>Having a range of support mechanisms for learners to get assistance when they need it helps deal with anxieties and fears on one level, and with 'fast learners' who are ready to move on to the next thing.</p>
<p>Read out instructions from workbooks</p>	<p>This supports learners with literacy or sight problems.</p>
<p>Demonstrate keystrokes and navigational aspects of ICT repeatedly</p>	<p>Learners may need visual demonstrations to find the required icons and the keys on their own keyboard.</p>
<p>Use and/or create interactive PowerPoint presentations</p>	<p>Interactive PowerPoint presentation can illustrate specific aspects of computer operations, and can be very engaging to the visual learner.</p>
<p>Be aware of any hearing and sight impairments in the group</p>	<p>Adjusting your voice/pace by speaking in a slow, loud, clear voice can help learners keep up. Clear visual demonstrations can compensate for these impairments.</p>
<p>With print based materials, ensure that:</p> <ul style="list-style-type: none"> - pages are well laid out - exercises and assessment tasks are clearly identified - font style used is easy-to-read 	<p>Accessible, easy to follow print based materials where instructions, tasks and assessments are clearly marked is crucial to the success of a program for older learners. Most ICT training materials follow a one-size-fits-all approach – often too much too soon. This does not work well with older learners.</p>
<p>Consider the amount and size of text on web pages before you use them with older learners</p>	<p>Many older learners have sight impairments and pages with a lot of dense text can be difficult to read. Some pages may not allow for enlargement.</p>

Conclusions

The “top ten” strategies for creating an effective learning experience for older learners

Older learners engaged in ICT learning:

- are more likely to undertake short non-award vocational courses - aim is to gain skills rather than qualifications
- increasingly turn to community training providers for vocational and personal training
- prefer learning in an informal learning environment, in small classes or groups
- need slower paced, low intensity training and often prefer self-paced learning
- take increasing responsibility for their training and learning and for sourcing learning which meets their needs, constraints and learning-style preferences
- are often independent learners - self-directed and with a clear idea of their own purpose for undertaking training
- highly value peer support, mentoring and tutoring
- value and respond to supportive and responsive teachers, tutors and volunteers
- want clear and explicit instructions, with print and web-based resources designed to accommodate age-affected sight and hearing
- generally feel more comfortable learning with a similar aged cohort

Potential barriers to learning

Older learners can be discouraged from ICT learning by:

- lack of basic computer skills, lack of knowledge of computer terminology
- fear of computer technology
- the ‘digital divide’ – not growing up with the technology
- skills level of many formal training courses – if too high learners can feel disempowered
- formal training environments – may not always suit self-directed, independent learners
- lack of recognition of prior experience – self-esteem may be affected
- age-related barriers - sight, hearing and mental agility
- language and literacy skills – especially, but not only, NESB learners

Case studies

Case study 1: BITES – Certificate I in Information Technology AMES, Melbourne Victoria

The **Basic IT Enabling Skills (BITES) for Older Workers** program provides workers aged 45 years and older with the opportunity to undergo nationally accredited training in information technology. The program is designed to help older welfare dependent people, who are in the labour force, to gain nationally accredited skills in information and communication technology, so they can operate more effectively in the workforce. (BITES web site; <http://itskills.dest.gov.au/>). Training focuses on an introduction to computers, the use of email and the Internet and word processing. The units of training are nationally accredited and contribute to a Certificate I in IT under the Australian Qualifications Framework. AMES delivered BITES course to communities within Victoria at its Dandenong, Frankston and Springvale sites.

Context

Course: The training was based on three units from the Certificate Level I (ICA 10101) qualification under the Information Technology Training Package (ICA99).

Operate a personal computer

Operate a word processing application

Send and retrieve information over the Internet using browsers and email.

Sector/environment: Adult Community Education

Delivery modes:

Group 1: 2 hours face-to-face and 2 hours independent self study (supervised) over 20 weeks

Group 2: 3 hours per day, 2 days per week over 10 weeks

Case study 2: Older Persons Electronic Network (OPEN) Launceston, Tasmania

OPEN, the Older Persons Electronic Network, is essentially a community based peer led ICT program. It was established in October 2001 and has its origins in the Year of the Volunteer projects conducted in Launceston at that time.

Hazzlewood, J. (2002) describes how this network aims to narrow the digital divide by providing guided group-travel on the Super Highway for lifelong and lifewide learners in this regional area of northern Tasmania. The objectives of the program are:

- to provide equity of access to eCommerce via the Internet for the target group, many of whom face barriers in accessing and using new technology;
- to disseminate accurate and timely information about the relevance and value of the Internet to older adults;
- to assess needs and interests of a group not at present being catered for and offer options for training, support and the opportunity to practise skills learned;
- to canvass wide community participation and recruit peer group and inter-generational volunteer eMentors and invite guest presenter contributions;
- to explore ways of achieving sustainability by exploring options such as the formation of a self-supporting computer club.

While there are other training and support options in the Launceston area, the OPEN Computing Program is attracting a group of people who find that many computer courses are too demanding, too long and/or move at too fast a pace. Some OPEN participants are people who lack the confidence to attend formal courses and are not keen to attend existing informal support groups which are usually held in the evenings and are once again, too advanced for these 'capable and curious' novices.

Context

Course: Certificate II in Information Technology (eLearn course) as well as various non-accredited application training courses.

Sector/environment: Free to students, TAFE subsidised materials, NGO venue, Internet provision

Delivery modes

TAFE Online eLearn resources placed in WebCT, with OPEN responsible for overall supervision and support provided by volunteers.

Case study 3: Community Internet & Technology Centre Port Pirie, South Australia

The aim of the Port Pirie Community Internet and Technology Centre is to make the Internet accessible to all members of the community, and to help them learn new skills and have easy access to Information and Communication Technologies. This Centre was established through an initiative of the Port Pirie Regional Council with support from *Networking the Nation* and *Networks for You*.

In the Port Pirie region approximately 38% of households are connected to the Internet. It is a relatively poor community with high unemployment rates. The Technology Centre offers a wide range of courses and services to the community. One of their greatest achievements to date is their ability to engage older adults in ICT training. Many of those learners have previously been reluctant to take up any training. Approximately 64% of the learners at the Centre are over 50 and 19% over 65 years of age. 13% are from a non-English speaking background and 83% of all learners are women.

The Port Pirie Community Internet and Technology Centre offers a range of fee-for-service computer courses such as basic Internet and email, digital photography, Microsoft Publisher, Word and Excel. Some of these are run as single sessions, or over 2 weeks. Other courses, such as computer basics run over longer time frames – 5 or 6 weeks. Some of the training provided by the Centre includes:

Basic Computer Training - basic computer functions, filing and folders

2 hours per week for 5 weeks

Internet and Email - surfing the Internet, using search engines and setting up a free email account: 2 hours per week for 2 weeks

Microsoft Publisher 2002 - using Publisher to create newsletters, flyers and other publications: 2 hours per week for 4 weeks

Context

Course: Basic Computer Skills – non-accredited

Sector/environment: South Australian Government: Adult Community Education

Delivery modes: 2 hours face-to-face over 7 weeks

Case study 4: The Computer Club Preston & Reservoir Adult Community Education (PRACE)

PRACE has provided a range of literacy and numeracy programs through State and Federal funding since 1993. The organisation has also gained a national and international presence within the field through the development and distribution of a range of literacy resources, both paper based and online.

Since 1994 PRACE has been teaching all sorts of beginner computer classes in collaboration with Preston Neighbourhood House.

“The Computer Club” Learn: Sustain: Peer Train

Preston Neighbourhood House Computer Club began in 2001 when a group of people realised they had studied all the beginner classes, and still wanted to learn more. Through the club, they teach themselves to build computers from old parts and continue to develop their software skills.

The website project

In 2002 the Centre received funding to develop a website for the club. The site was developed with the potential of containing resources that could be updated by the club themselves. After consulting with the club members about the graphic design and navigation, the developer discussed what would be useful content for the site, both as an Internet resource for hardware enthusiasts like themselves, and for teaching new members of the club.

There was then a series of workshops aimed at giving the Computer Club the skills and knowledge to take the site over independently. Workshop topics included copyright issues, Dreamweaver basics classes, effective search techniques and how to update the site database. These skills workshops were so popular the club wanted to continue weekly classes in 2003.

2004: The Computer Club continued to meet every week, and skills workshops were still being provided by PRACE on request of the club, and as funding allowed.

Context

Course: The "Upgrading and Maintaining" Computer Club

Sector/environment: Adult Community Education

Delivery modes: Independent club meets once a week; occasional face to face skills workshops as requested and as funding allows

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Case study 4: Michael Chalk, Preston and Reservoir Adult Community Education
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