Staying digitally connected – a study of learning and support provision for older people in seven cities in the United Kingdom and implications for policy and practice

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Abstract

Many older people successfully use information and communication technologies (ICTs) to improve the quality of their lives and to extend independent living. However, their ability to sustain such usage in the face of many barriers depends to a considerable extent on effective learning and support. To establish the availability of such learning and support provision in the United Kingdom, an investigation was conducted as part of the Sus-IT project in 2011 in a carefully selected sample of seven UK cities. This study identified UK Online Centres and Age UK as the two main providers of face-to-face ICT learning and support for older people. Some public libraries, community groups such as U3A and 50 plus forums and some local Age UK agencies also provided tutor-led classes and/or one-to-one support. While examples of good practice were identified, the study reveals a significant shortfall in the learning support provision available to sustain digital connection or engagement of older people. The paper concludes with a discussion of how these shortcomings may be addressed through coordinated policies, strategies and practices which extend from central government across local government, the third sector and the business sector.

Introduction

In a rapidly ageing society new digital technologies can improve the quality of life for older people and help them to stay independent. While many older people are enthusiastic, competent and confident users of ICTs they are likely to experience a range of challenges in reaching and maintaining digital engagement as they age

(Olphert & Damodaran, 2010, 2013). These challenges include sensory, physical and cognitive changes such as impaired sight and hearing and reduced mobility (Hawthorn, 2008) as well as personal and social changes. Those challenges that can be overcome or mitigated need to be addressed if the goal of wider social and digital inclusion is to be achieved.

In the UK there are over 21 million people aged 50 years and over (ONS 2011). 86% of the 7.1 million people who are non-users of the internet are aged 55 or older; 42% are 75 and over (ONS 2012). 17.1% of people aged 55-64, 37.4% of people aged 65-74 and 71.2% of people aged 75 and over have never used the internet (*op.cit*.).

Most of the older people who are non-internet users would probably require assistance to begin to use the internet and significant learning support to sustain on-going use. Provision of this support is a pressing requirement if we are to sustain older peoples' use of ICTs and enable them to be active and confident participants in the digital world as they age.

Investigating and exploring digital engagement of older people, the risks to sustained usage of information and ICTs potential solutions has been the focus of a major research project entitled 'Sustaining ICT Use to Promote Autonomy and Independence in Later life' (Sus-IT). This project is part of the New Dynamics of Ageing Programme, funded jointly by all five research councils in the UK (Olphert & Damodaran, 2010). One strand of the project has explored and identified appropriate and effective learning, training and support mechanisms which promote and sustain digital engagement by older people, enabling them to exploit effectively the capabilities of ICT to sustain independence and improve their quality of life. (Sandhu, Damodaran & Ramondt, 2013). The Sus-IT digital engagement survey of older adults aged 50+ found that 56% of older adults regard support as the most important factor in sustaining participation in the digital world. One quarter of these stated that face-to-face support was the most important thing to help them to use technology successfully (Damodaran, Olphert & Sandhu, 2013).

Preliminary information searches, conducted within the Sus-IT project, reveal that in the UK, beyond the education sector, there are numerous public, private and third sector organisations offering ICT learning and support to adults of all ages delivered in courses varying in scope, level, duration, cost and with differing combinations of on-line and face-to-face delivery. Most of these are accredited courses targeted primarily at members of the working population or those seeking work. Training for ICT beginners typically takes the form of generic instruction delivered in a standard form.

Such an approach, developed primarily with younger adult learners in mind, has been shown to pose a number of issues and problems for older adults (Sandhu, Damodaran and Ramondt, 2013, Dickenson *et al.*, 2005, Echt, 2002). The investigation reported in this article, therefore, seeks to address the question of what ICT learning and support provision is available for older people in the UK - provision for both novices and more experienced ICT users - to consolidate learning and to extend it into on-going, established and confident digital engagement. The study comprises (i) a specification of the ICT learning and support requirements of older people (ii) an initial internet search of the support available (iii) a literature review of relevant research and issues (iv) a small-scale investigation of ICT learning and support provision available in a sample of seven UK towns and cities, designed and conducted between May and July 2011.

Specification of the ICT learning and support requirements of older people

Sus-IT worked with the organisation KT-Equal in a collaboration with older people, researchers and training providers to create a specification of the ICT learning and support requirements of older people (KT- Equal, 2011). K-T Equal, according to its website, is "a consortium of UK researchers dedicated to extending quality life for older and disabled people".

This specification of ongoing ICT support requirements for older people (defined as 50+ years), reads:

- Readily available and from trusted sources
- Delivered in familiar and welcoming local venues across the UK
- Sustained and on-going (i.e. not 'one-off' initiatives, pilots, trials and projects)
- Embedded in social and purposeful activities

- Free of formal assessment and 'pressure'
- Help with problem-solving and troubleshooting e.g. upgrades, virus protection, setting up equipment, installing new software etc.
- Impartial information and advice about new devices, software, applications, accessibility aids etc.
- Opportunities to 'try-before-you-buy' and help with installation to ensure a smooth transition from existing set-ups
- Opportunities to build on and extend existing skills and competence (without the need for formal classes or working towards formal qualifications)

Such a specification of requirements immediately raises the questions of what learning support is actually available to older ICT users in the UK and the extent to which it meets the specification.

Initial Internet Search

To gain information on the ICT learning and support provided explicitly for older adults in the UK, Sus-IT conducted exploratory internet searches using search terms including "older adults and IT use", "elderly internet and IT training", "IT training for adults", "silver surfer training", "computer classes and elderly training". These searches revealed that information about the provision and extent of face-to-face ICT learning and support available to the 50+ age cohort is not systematically documented and is difficult to find. Most of the provision identified is generally available to adults of all ages. On the basis of this search, Sus-IT estimated that there may be fewer than 700 nationally recognised centres in the UK explicitly offering face-to face ICT learning support opportunities specifically for older adults.

Findings are briefly described below.

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Community and voluntary organisations and groups

University of the Third Age (U3A) and Older People's 50plus forums in the UK make some provision of ICT learning and support for their membership of older people. There are currently 886 U3As in the UK (U3A, 2012). Provision might include starter sessions, structured courses for beginners, dropin 'clinics' to resolve problems with hardware and software and sessions in which older people bring their own laptops to receive one-to-one training on their use. Making headcounts of usage by older people is made problematic here by the facts that individuals may be members of more than one organisation while organisations may be members of more than one network.

Public libraries

Most of the 4,039 UK public libraries provide free public access to computers and the internet (Collections Trust, 2012). Some libraries also offer computer skills and internet training on a one-to-one basis or to couples or groups but not usually specifically to older people. Some offer instruction on job-seeking online, searching for health information, researching ancestry and family history. In some areas, classes are held which are normally open to learners of all ages, are reliant on self-taught methods through use of online materials and have a fee. Although libraries do not generally offer ICT learning support explicitly tailored for older people, it is true that for many older people the Ramondt, L., Sandhu, J. and Damodaran, L. 2013. "Staying digitally connected- a review of current learning and support provision in seven cities for older people." International Journal of Education

library is seen as a familiar and comfortable venue in which staff are generally supportive and helpful with ICT use.

UK Online centres

The UK Online centres network was established in 1999 and funded by the Government to recruit, fund and train ICT centres to provide free local access and support to use the internet . It is managed by the Online Centres Foundation, a mutually owned social enterprise. The network has just under 4,000 centres, a third of which are voluntary organisations and the remainder public libraries, adult and further education organisations, private training providers and workplace centres. In the UK Online Centres network, 556 (15%) of the 3800 centres specialise in helping older people. All UK Online Centres have access to the *Learn my way* basic digital skills courses and other resources to assist the centres' learning provision. (Online Centres Foundation Strategy, 2011).

Digital Unite

Digital Unite is the delivery arm of the Digital Unite Trust. It provides free online tutorials, targeted at older people, on a range of topics including computer basics, creating documents, email and skype, using the internet, social networking, shopping and banking and digital photography. It provides an online community forum, tutor training for the staff of organisations, a comprehensive structured learning programme for residents in sheltered housing, a national network for fee-based home tutoring, an accredited online Digital Champions course and more (Digital Unite, 2012).

Age UK Centres

Age UK is a national charity organisation concerned with all aspects of the well-being of older people. In partnership with Age Scotland, Age Cymru and Age Northern Ireland, it maintains a Digital Inclusion Network. Through local community initiatives, the Network provides members with project resources as well as opportunities for communication and information - sharing. Of approximately 170 Age UK centres across the UK, just over a third (65) offer face-to-face computer training and online resources free of charge to older people. The majority are only open to clients based in sheltered accommodation and care homes (Age UK, 2012).

Learndirect centres

These centres are government-funded providers of ICT learning opportunities through the use of drop-in centres. Their training courses are designed for all ages, mostly online, primarily vocationally oriented and charge a fee (Learndirect, 2012).

Online Resources

'BBC Webwise', 'Learn my way', 'Firstclick' and 'Alison.com' are examples of online resources for ICT learning and support which are widely used in the UK. These resources are freely available on the web and provide resources and guides on a range of topics from first steps, using a mouse and keyboard, online internet security and banking and shopping online. All of this provision is potentially available to older people but the usage by them is not easily estimated.

Literature Review

In conducting the literature review, search terms included "older people/adults", "ICTs, learning and support provision", "ICT learning and support initiatives", "digital engagement", "computer classes/courses", "distance learning", "online resources", "libraries", "community centres". A range of resources were surveyed including, Ingenta Connect, Elsevier, Emerald Management E Journals, JSTOR, Springerlink, SAGE Journals, Google books, Google Scholar, Abstract Index, InfoScience and NTU Academic ESearch.

Literature searches were conducted for published research relating to older people, ICTs and learning and support provision. These searches found a number of studies that reveal a varied range of suppliers and provision even in the earliest research. Selwyn, in 2003, conducted a questionnaire study and a mapping exercise of 12 wards (i.e. districts) and their public ICT facilities. Selwyn identified a range of computer and internet enabled facilities providing ICT training similar to that discussed in the previous section of this article (including libraries, community, adult education and UK On-Line centres, colleges and not-for-profit organisations). This study provided details of where ICT training venues could be accessed but did not provide information on delivery methods used. Similarly, information on timing, frequency of provision and suitability for older people were not reported (Selwyn, 2003).

This literature search found little that documented the effectiveness of any provision in meeting the needs of older people. Although some articles did provide indications of ICT provision for older adults (for example on recruitments to computer classes) there was not enough information to draw conclusions about the nature and frequency of provision.

Warschauer (2003) pointed out that ICT learning and support provision is not only about opportunities for learning new skills but also about access to a variety of resources comprising physical resources (infrastructure and equipment), digital resources (content services), human resources (literacies and education) and social resources (communities and institutions supporting/facilitating use of digital resources). The type of provision reported in this literature review, however, was usually in the form of courses and classes. In an interview survey carried out with 353 participants aged over 50, Goodman *et al.*, (2003) found almost half of the participants had learnt to use ICTs by participating in a course (47%); just over a quarter learnt to use ICTs within a work setting (28%); over a tenth of older adults were self-taught (14%); and a further tenth had learnt from a relative or friend (14%).

In the Digital Lifestyles Report of Ofcom (2009) face-to-face interviews were carried out with 715 older adults over the age of 60. They showed that learning informally through asking friends, family or work colleagues (49%) was the most widely used method for gaining ICT skills, followed by reading a manual (35%), trial and error (25%). gaining advice and instruction from IT suppliers or stores (10%) and, lastly, attending a class (6%).

There may be several reasons for the discrepancies, over methods of ICT learning for older adults, identified in the Goodman *et al.* and Ofcom. One reason may relate to the different age-range of participants from each of the studies (i.e. Goodman *et al.*, included people who are aged 50+ whilst Ofcom study participants were aged 60+). The 50+ sample may have attended IT courses in the workplace (a higher proportion of participants in the Goodman *et al.* study report undertaking workbased ICT training. Additionally, the Ofcom interviews took place six years after the Goodman *et al.*

survey. It may be that during this interval computer usage became more pervasive and more frequently discussed informally, making it easier to learn informally with family and friends.

When asked, in another study commissioned by Ofcom (2009), if they preferred learning ICTs by talking to friends and family, reading a manual, through trial and error, through the IT supplier/store or through going to a class, adults aged 60 and over were found to be more likely than the general adult population to say that they did not have a preferred way of learning about digital technology. Ofcom also reported that this relative lack of preference for methods of learning is more common among those aged 70 and over (22%) than among those aged 60-69 (12%). This finding, of course, may be due to a number of different factors. For example, people (of any age) are unlikely to be able to answer questions about preferences confidently if they are not familiar with the range of options offered.

Interestingly Sourbati (2009), at the same time, after examining everyday practices and perceptions of media use in two sheltered accommodation complexes in London, reported that the availability of networked equipment and provision of basic computer skills training was not embedding internet use as part of older people's everyday practices.

Literature searches also revealed the role of mobile units in delivery of ICT learning and support. Tooby (2006) argued that mobile resources needed to be utilised more effectively to enable people who are socially and economically excluded to have the opportunity of acquiring ICT skills. NIACE (2005) produced an informative briefing sheet with details of mobile ICT resources which were available at the time for older people. Mobile units were intended to address a range of problems such as accessing the geographically isolated, those under financial restraints, those suffering from lack of confidence and those reluctant to try something new (NIACE, 2005, p. 2). Mobile units offered training 'on board' vehicles to a variety of settings such as army barracks, bowling clubs, care homes, church/village halls, libraries, pubs, own homes, schools and colleges (NIACE *op.cit.*). Such settings, it was suggested, enabled people to learn in relaxed, informal and familiar environments. NIACE reported that courses on a wide range of ICT topics were delivered through mobile units, including Adobe Photoshop, basic skills, databases, desktop publishing, digital camera use, Email, Excel, family history, Internet, scanner use, PowerPoint and spreadsheets (NIACE, *op.cit.*). Usefully, the briefing sheet also provided examples of good practice (*see pp.3–5*).

The increasing availability and improved performance of mobile technology at the present time may mean that mobile units may no longer be needed to provide access to ICT as most locations can be served using mobile technology such as Wifi and 3G. However face-to-face support and assistance is still likely to be wanted by older people.

Finally, this literature review looked at some of the common characteristics of ageing and their implications for the design of ICTs for older people. Ageing is associated with sensory, physical, cognitive, and personal/social changes. For example, various forms of visual impairment an affect the ICT users' capacity to see what is on the screen; reduced mobility may result in impaired hand dexterity with implications for use of the mouse and keyboard (Hawthorn, 2008); cognitive impairment and associated short-term memory deficiencies may make it difficult for older people to remember multiple instructions or their sequencing as in attaching photographs to emails. Some sources suggest that maintaining concentration for extended periods can also be a problem (Purdie

& Boulton-Lewis, 2003, Sayago & Blat, 2009). Such factors, and the lack of user-friendly ICT learning tools, may make it difficult for older people to use online learning and support resources (Ala-Mukta *et al.*, 2008). A user-interface may be "confusing if it has many elements, or the buttons and text may simply be too small for people with poor eyesight and who may have trouble using their hands with precision" (*op cit.*, p.22). These problems may confound learners who already lack confidence in their ability to succeed (Purdie & Boulton-Lewis, 2003; Sandhu, Damodaran & Ramondt, 2012).

Investigation of ICT learning and support provision for older people available in a sample of seven UK towns and cities

Objectives

The objectives of this study were to identify and map what ICT learning and support provision, particularly face-to-face provision, was available for older people (50+ years, both novices and more experienced ICT users) to learn about ICTs and to consolidate their learning beyond initial learning. The investigation was conducted during May – June 2011 in seven cities in the UK.

Sample

In order to select a representative sample of UK cities, the socio-demographic profile of 12 of cities was investigated – four small cities (a population of up to 200,000), four medium cities - a population of 200,000 – 400,000) and four large cities (a population of more than 400,000) were selected. Information was collected on age, social class and gender split of the local population. From these 12 cities seven were selected for the purposes of the mapping exercise. The selected cities included:

- 1. Small City Gloucester (population of 110,000, 17.8% aged 65 and over).
- 2. Medium Cities Newcastle upon Tyne (population of 259,000, 16.8% aged 65 and over); Brighton (population of 248,000, 16.4% aged 65 and over).
- 3. Large Cities Bradford (population of 467,000, 16% aged 65 and over); Liverpool (population of 440,000, 16.9% aged 65 and over); Birmingham (population of 992,000, 15.4% aged 65 and over); Glasgow (population of 592,820, 23.3% aged 65 and over).

The percentage of people over 65 ranged from 15.4% in Birmingham to 23.3% in Glasgow.

Research Process

For each of the seven UK cities selected, a preliminary internet search was carried out to collect information on ICT training provision in each city. The UK Online centres "Find a centre" tool was used to identify partner and affiliate organisations in each city and the same search terms used as reported in the Initial Internet Search described above.

83 organisations were identified as providers in the seven cities. 71 were successfully contacted using telephone, email or written letter. From subsequent dialogues with staff in the organisations concerned it emerged that only 55 of these organisations (Table 1) provided services of likely

interest or relevance to older people. Structured interviews were conducted by telephone with learning co-ordinators or centre managers at these venues. When telephoning organisations, it proved most successful to ask to speak to the training manager, general manager or education/learning department. In some cases these positions or departments did not exist, so reception staff provided information. In many cases it took repeated calls to schedule the interview appointment. Successful calls, generally of between 30-40 minutes duration, were made to 55 organisations.

Although considerable effort was taken to identify as many recognised ICT learning and support providers in the seven cities as possible, constraints of time and available information made it inevitable that some provider organisations will have been missed. Therefore, the list cannot be regarded as definitive. Moreover, major changes in funding and policy were taking place at the time of the study and these will subsequently have continued to have effects on the available provision.

Table 1: ICT Training Provision respondents (55 Providers) in 7 cities

City	Name of Organisation	Name of Organisation
Birmingham	Birmingham Central	Enterkey Training
	Library	Eternal Learning
	Birmingham Adult	Network Centre
	Learning Service	Fir Cone
	Bluesky Project Solutions	Wheel Right Community
	Digital Unite	Project
		Workers Educational
		Association (WEA)
Bradford	Age UK Bradford and	Horton Housing Training
	District	Centre and Bradford
	Age UK Bradford and	Central Library
	District and Bradford	Learning Zone Bradford
	College	Nile African
		Development (UK Online
		Centre)
Brighton	Age UK Brighton	Jubilee Library
	Becca's 50+ club	Rewards Brighton
	Digital Unite	St John's Centre for
	Friend's Centre	Older People
		St. Richard's Community
		Centre
		U3A
Glasgow	Contact Point	GTG Training
	Castlemilk Drive Library	Mossvale Community
	Glasgow City Library	Church/Centre
	The Glasgow Volunteer	The Castlemilk
	Centre	Pensioners' Action
		Centre
		Values into Action
		Scotland

Gloucester	Age UK Gloucestershire	Gloucester Central
	Barton Learning Centre	Library
	Churchdown	Gloucester College
	neighbourhood	Phoenix Centre
	partnership	Poets Corner
	Digital Unite	U3A
Liverpool	Age Concern Wirral and	The Liverpool Centre for
	Liverpool City Council	Arts Development Trust
	Elsick's Community	Merseyside Network for
	Association	Change
	LEDT Development Trust	Seetoc / Myguide
		Project
Newcastle	Age UK Newcastle	IT Outreach Project
	The Chinese Centre	Learning Links Newcastle
	Exchange Group (UK	Newcastle City Library
	Online Centre)	Search Project
	Integration Gates CIC	U3A

Analysis

All the telephone interviews were recorded and the contents transcribed. Individual interview transcripts were examined by the researcher and analysed using the constant comparative method (Miles and Huberman, 1994). Raw data from the transcript were entered into grids (Boyatzis, 1998). This process condenses the data to ease the management and systematic perusal of it. Examination of the contents of the grid readily enabled the identification in the seven cities of (i) the main providers of ICT learning and support; (ii) the types of ICT learning and support provision offered by these providers. The use of the grids allowed categorisation of the data and identification of the themes discussed under the three headings in the findings section below.

Findings

Internet searches to identify ICT learning and support provision in the selected cities typically generated a list of between seven to ten organisations, mostly identified as partners and affiliates of UK Online. Whilst the study was able to find centres outside the network, to do so would probably present problems for people with no or limited digital skills. The UK Online centres "find a centre" data base is the only substantial public information about the availability of learning and support for digital inclusion and this information can only be accessed online.

1. Learning opportunities and support

The most common forms of provision identified in libraries and community centres were online programmes undertaken on an individual basis on the computers available. Courses mentioned included; 'iStart', 'Online basics' (part of from 'Learn my way') and 'Alison' However, far more frequently 'MyGuide' was mentioned along with BBC's 'FirstClick' and 'Webwise' programmes.

These online courses are designed as self-instructional materials and include animated tutorials and narration. For example, the 'My Guide' course begins with an overview of what the Internet provides and mouse and keyboard use. It emerged from the interviews that the use of these is not without its complications for the 104 International Journal of Education and Ageing

novice. To progress, the learner needs to create an account and log-in. This proved to be problematic for some learners especially when human support was not available to help them deal with log-in problems. 'MyGuide' was replaced by the UK Online 'Learn my way' programme in September 2011.

A number of face-to-face courses were available in libraries, community centres and local agencies in the seven cities. These were primarily focused on basic Internet and computer use for mixed age groups, with centres reporting around 30% participation by people over 60. Face-to-face course duration differed from one to two hours per week for eight to 30 weeks per course and class size from six to 20 participants. Tutor support varied from paid to unpaid, trained to untrained, tutor/student ratios ranging from 1:2 to 1:6. Waiting lists also varied but a wait of 6-10 weeks for a course to start was the norm at the time of the study. Course fees also ranged from free to (at the time) £90 for a 30 week course, with £2-£5 per session being common.

At two of the large city locations (Newcastle and Liverpool), in addition to courses in basic skills, a wide range of different face-to-face services had developed in response to requirements, aspirations and preferences of their older users. This reflected the diversity in this wide age-group. Older people differ in their life experiences, capabilities and skills, passions and interests – as well as ideas about how and what they would like to learn.

2. Quality, content and mode of delivery

The study found a broad range of providers from public, community and voluntary and commercial sectors were offering ICT learning opportunities. There were pockets of good practice across the seven cities surveyed. It is important to note that no area emerged as consistently good or bad; the quality of ICT provision appeared to be mixed in all seven cities.

'Webwise', 'Learn my way', 'ALISON.com and 'Learndirect courses all tended to be used in more the more formal approaches. In contrast, successful and effective delivery of face-to-face learning support was believed by some providers to require a flexible approach with regard to content and methods that were appropriate to users' needs and priorities. Following a standard curriculum was not seen as relevant for many of their users as they were usually seeking basic ICT capabilities to carry out a variety of daily needs and interests rather than to secure formal qualifications.

The study revealed wide variation in the interpretation of what constitutes 'basic' IT skills. In some centres this means teaching Microsoft Word, in others it could include instruction on how to scan and crop images, teaching someone how to compile and send an email and attachment and how to shop online.

An emphasis on provision of human support was evident in a number of the venues included in the sample. For example in Glasgow, City Library staff reported that their own research showed that total beginners need tutor-led help. Similarly, in Newcastle City Library, there was a council-funded

tutor, usually a librarian, whose role it was to sit with all newcomers as they used 'FirstClick' to ensure that their initial experience with computers was positive and enjoyable. The local success and effectiveness of this supportive approach was evidenced by the results achieved in progression. Library staff reported that it had led to 80% of the tutees subsequently enrolling in teacher-led courses to develop further their digital skills. Libraries in Newcastle also actively promoted use of accessibility tools such as the free 'Thunder' screen reader.

Reported experiences and responses to online training varied. Some staff observed that online courses can could confusion but they did make them available to those who requested them. Other tutors reported finding that their learners preferred online training with the option of tutor support to tutor-led classes. Some staff reported that demand for their beginner's courses was decreasing because participants in their geographical area had progressed beyond the beginner stage.

ICT learning and support programmes which were particularly well-received included those offered through the St John's Older People's project in Brighton and at the Castlemilk Pensioner action group drop-in centre in Glasgow. These projects demonstrated the value of peer tutoring at different skills levels. St John's provided a face to-face course that reported high subscription focussing specifically on easing older people into basics through four sessions spent emailing each other across the room, learning how to order groceries online and attaching documents to emails.

3. Provision for meeting 'ICT troubleshooting' requirements

Although there was some rudimentary ICT learning support on offer for beginners in most areas surveyed, face-to-face provision of help in sustaining ICT use was more difficult to find. While a number of centres mentioned providing a drop-in service of some kind, few mentioned assisting older people with tasks such as editing a video and burning it on to a DVD, printing letters or connecting a new printer to a PC or with troubleshooting on an issue specific to the individual's home technology. Castlemilk Pensioner Action Group in Glasgow was a notable exception to this finding.

The Castlemilk Pensioner Action Group reported that 100 older people a day used the five computers in their drop-in centre, supported by their volunteers, with 23 out of the 25 volunteers aged over 70 years. Volunteers provided valuable one-to-one peer support to learners, to help them to solve technical issues or to learn new concepts and skills such as those required for cross-platform procedures e.g. the transfer of images from a digital camera to a computer.

The Age UK centre in Brighton reported, that their drop-in mornings held three times a week were very popular, with older people sometimes queuing to use the computers. Activities commonly included Skype use, email and letter writing. Although they had a volunteer on hand, reportedly most people "know what they are doing". Their ten week structured "IT for beginners course" was undersubscribed, however.

In the Gloucester public library there was a popular 'Computer Buddies' initiative with 'buddies' providing one—to-one support in twice-weekly sessions offered by appointment. This programme appeared to be empowering older people by encouraging and supporting them in enhancing their skills. Buddies now led group-training sessions, with the content determined by participants' preferences regarding their need and pace of work. Age UK Newcastle reported hosting a weekly

drop-in centre run by knowledgeable volunteers, for "those niggling questions", such as "how do I connect my new printer to the computer" or "how can I make the icons on the screen bigger".

Discussion

The study reported here revealed that the ICT learning support provision in seven cities was extremely patchy, variable in quality, availability, approach and content and falling a long way short of meeting the requirements specified by older people themselves. There is a far more provision for ICT beginners than for those needing to consolidate their embryonic skills and to sustain their digital participation skills beyond the classroom. The most serious deficiency identified in this respect was the low level of provision of help with 'troubleshooting' to address such matters as connection problems, choice of ISP, and the purchase of ICT devices. Although some pockets of good practice were identified and documented in this paper, there is little evidence of wider success in meeting the specified needs and interests of older people.

What is notable is how few of the requirements that were identified through the Sus-IT/KT-Equal collaboration which consulted with older people (see above) had been incorporated in the provision investigated. Indeed most were not offered in any form by the providers.

This study has revealed a significant gap between the scale of the requirement for significant ICT learning and support to meet the needs of millions of older ICT users in the UK and the reality of limited provision available in the sample of seven cities included in the study. It is evident from the data that ICT learning and support provision which specifically address the needs and requirements of older people is in short supply across the UK.

The point is well-illustrated by the following comment:

"The cost was an issue for me...I think it was something like £50 for an 8 week course. I struggled to pay for the course. To be honest I wish I hadn't because the course left me feeling more confused than before I attended the classes" (Mary aged 68).

It is the case that all but the very smallest employing organisations will have ICT support personnel to ensure, for example, that spam filters and virus checking software is installed and updated on a regular basis for employees and that training and support required by software upgrades is available. In sharp contrast, older people (and others) outside the workplace must fend for themselves. This means having to rely on whatever support they can find from friends and family or in the community and, typically, experiencing the associated frustration:

"My son ... hasn't got the time to sit with me and talk me through things. That's why I really need to get involved, learning more about the computer. I feel left behind. I don't like that much" (Maurice aged 66).

"They (children and grandchildren) just take over and they don't tell me what they are doing, that's not going to help me if I am on my own and it happens again" (Wendy aged 92).

The inadequacy of provision revealed by this study seems to be at odds with the digital inclusion policies promulgated by governments in many countries. Most provision in the UK appears to be limited to campaigns to boost numbers of people using the internet and to be driven very largely by the skills and employment agenda. Yet significant changes in the UK in the social benefits system, and rapid transfer of other government and support services to online access only, will require older people to acquire and maintain their digital skills if they are not to be seriously disadvantaged. Older people, too, face the task of keeping up with rapidly changing technology, and associated issues of security and technical complexity, with highly inadequate support. The disparity is striking between the widespread, co-ordinated, sustained and well-resourced provision available for the working population and the piecemeal, often short-term, variable quality and uncertain funding arrangements of provision for older people. The route to a sustained digitally engaged and empowered older population can only come about through making the right learning support universally available.

Learning support for older people to sustain their use of ICT would benefit greatly from incorporating a number of established educational practices. For example, there would be benefit from considering the emphasis of Getner and Stevens (1983) on mental models. There should be ways to enhance older people's understanding of ICT through the explication of principles, processes and strategies including common screen or touch screen navigation conventions and understanding the key functions of software such as operating systems and word processors. Internalisation of such knowledge (and accepting that there will be many older people motivated and able to assimilate it) will allow older people to transfer their understandings to the next generation of technologies.

Equally, face-to-face delivery of learning support would be enhanced by explicitly designing delivery methods to meet the needs of people with different learning needs and styles. Findings from the Sus-IT research (most recently reported in Sandhu, Damodaran &Ramondt, 2013) clearly identify the barriers that need to be overcome and the needs- based practice that is most effective in overcoming them. Good practice takes account of learning characteristics of older people including slower-paced delivery, repetition of instructions on operating procedures, strategies to assist learning retention, and the opportunities for repeated mentor and tutor support and practising. Tailored educational enhancements of this kind could lead to a multiplicity of support mechanisms being developed and implemented, ranging from materials which include memory support; lively "did you know you can?" examples supported with exercises; progression frameworks for self-help groups and peer tutors; and the sharing of effective practices (Smith, Damodaran &Sandhu 2013).

The findings reported in this article suggest that there would be significant benefit from setting up forums for sharing effective practice between digital champions, tutors and groups, on, for example, which strategies would engage participants most effectively and what helps older people to learn transferable troubleshooting skills. The findings have also shown the urgent case for wider access to face-to-face troubleshooting and task support sessions linked to access to technologies such as printers, DVD burners and cross platform activities, e.g. downloading from iTunes to an mp3 player, making and editing videos using digital camcorders and editing software (Sandhu, Damodaran & Ramondt, 2013, Smith, Damodaran & Sandhu, 2012).

It appears that those providers for older people that have flourishing learning and support venues are primarily user-led, designing their provision around the interests and needs of local older people.

Examples can be found in a digital hub or clubhouse setting and elsewhere (Smith, Damodaran & Sandhu 2013). To inform the design of such provision and delivery, there has been some pooling of effective practice with widespread applicability which is now freely available for use under a creative common licence (see KT - Equal, 2013).

It is striking to observe that 10 years after Selwyn (2003) conducted his survey, it is mostly the same providers which he found which continue to offer most ICT skills learning opportunities in the UK, outside the workplace. New campaigns and initiatives in the UK are frequently launched to promote ICT uptake among non-users, but largely the pattern of provision has not changed. Information about the services offered still appears not to be systematically documented on either a regional or a national basis. There is little systematic evidence available of the impact of individual projects and local activity and the degree to which they enable older people to stay connected.

Addressing the shortcomings identified in this study in the UK will require coordinated policies, strategies and practices which extend from central government across local government, the third sector and the business sector. Much of the know-how required to address the shortcomings already exists in the research outputs and outcomes of major publically funded research programmes in the UK, such as the New Dynamics of Ageing and KT- Equal programmes and of many other initiatives in the learning provision/digital inclusion sector. Exploiting this expertise appropriately has the potential to deliver an inclusive connected progressive society. Realisation of this potential requires political awareness and skill, the ability to harness lessons learned and viable collaborative approaches developed in the field in times of economic difficulty and unprecedented demographic shift. The ultimate reward available to any nation following this path is the achievement of the widespread active participation of the older population in the digital world and the many benefits that will follow for a digital society and economy.

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