

The Learning and Support Preferences of older adults with Information and Communications Technologies (ICTs)

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ABSTRACT

An increase in knowledge and understanding is to be further investigated about the learning and support of older adults with ICTs to promote autonomy and independence. This paper proposes to firstly review the existing learning and support mechanisms that older adults use. Secondly to highlight the new and potential learning and support mechanisms which could be used to further older adult's engagement with Information Communication Technologies (ICTs). This paper will discuss the empirical based findings of past research to highlight the number of widely used and established learning and support mechanisms that older adults adopt, as well as new and potential ones to consider.

KEYWORDS

Learning, Information Communication Technologies (ICTs), Ageing, Older Adults, Virtual Environments

INTRODUCTION

This paper will begin with the ageing demographics for the UK. The paper will highlight the reasons why the older adult population is of considerable importance in terms of furthering their engagement with ICTs from a learning perspective. The paper will continue to detail why older adult learning is important, and that more should be done to increase the practice among older adults. The main theme of this paper will provide the current established ways of learning and older adults' learning preferences together with the barriers to learning and ICTs for the older adult population. This paper will conclude with new and potential learning and support mechanisms that are important for achieving successful learning outcomes.

TYPESET TEXT

Ageing Demographics

According to the Office of National Statistics (2010) the UK population is ageing. The 65 and over age group is forecast to increase to 24 % of the overall UK population by 2034 (Office for National Statistics, 2010). This is shown in Figure 1.

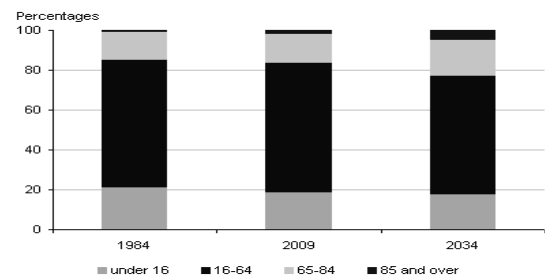


Figure 1: A graph to show the ageing demographics in the UK

These statistics indicate that the older generation is a prominent group. They are less likely to use ICTs than other age groups (Ofcom, 2010). Older adults could benefit from the uptake of learning ICTs in a number of ways. These can include the promotion of social inclusion by forming friendships to learning in general for pleasure and fulfillment. The definition of what age constitutes an 'older adult' is however subjective. For the purposes of this research, older adults will be considered the age of 50 and above. This is influenced by the UK public policy for the NHS (Anderson, 2008) as well as the National Service Framework for Older People (NFS, 2006). The World Health Organisation (WHO's) also defines an older adult to be 50 and above (World Health Organisation, 2010).

Older adults and Learning

Older adults and learning is a complex issue. This is because they are a heterogeneous group which can be differentiated by a number of factors including gender, age, culture and socio-economic status (Vincent, 2007). There are a plethora of reasons why older adults do not engage with ICTs including: situational factors; institutional factors; informational factors; psychosocial factors (Findsen, 2002).

This paper will firstly, continue to provide an understanding about how older adults learn, as well as to establish effective and possibly pleasurable ways of learning in the context of ICTs, so that older adults can apply it to learn to use a range of digital technologies (ICTs) with respect to the dynamics of ageing. Such technologies can range from the desktop PC to train ticket systems. Figure 2 show that the 55 + age groups use the computer and mobile phone far less than any other group.

Proportion of all media use through each device, by age group

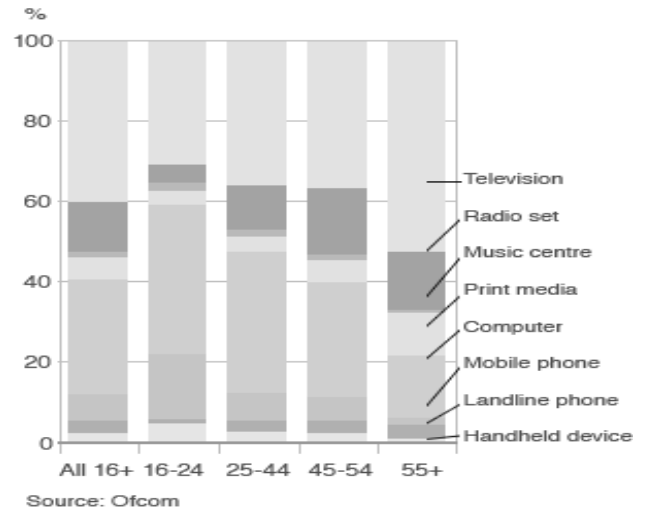


Figure 2: A graph to show the age group distributions and corresponding media usage (Ofcom – Communications Market Report, 2010)

It is therefore important to understand more about the relationship between how older adults learn in relation to ICTs, and to establish effective learning and support methods to further their engagement with them. Before this however, it is important to consider already established learning methods that older adults adopt, and any associated aspects that are attributed to these successful learning methods.

Established Learning and Support Mechanisms

The most prominent learning and support mechanisms will be provided in order to understand how older adults learn to use and are engaged with ICTs as well as their learning preferences. The most widely used learning and support mechanisms that older adults adopt (in order of popularity) according to the Digital Lifestyles Ofcom (2009) report are: (1) Informally by asking friends, family or work colleagues; (2) Reading the manual; (3) Through Trial and Error; (4) Through the supplier or store; (5) Going to a class (Ofcom, 2009). However, according to Goodman et al (2003) study of learning methods and preferences for learning to use ICTs by older adults gave the

following: Participating in a course (47 %); Using ICTs within a work setting (28 %); Self Taught (14 %); From a relative or friend (14 %).

Goodman et al (2003) survey indicates that all modes of learning should be placed with importance when considering the learning provision of older adults and ICTs. Moreover, the repeated themes reinforce the main learning and support mechanisms that older adults use. Other established learning and support mechanisms that are widely used in relation to ICTs (and from an educational context) include the use of web based courses and formal or informal classes which are described in the following section.

Formal Web based courses

Web based courses have proven an effective and widely used means to learn. Rakap (2010) conducted a study on the impacts of learning styles and computer skills on 46 adult student's learning online to test the effectiveness of web based courses. The study found that students liked the format from their satisfactions and perceptions of web based courses. Furthermore Rakap (2010) study also suggested that there is a "moderate positive correlation between computer skills and a student's success". If the web based course was tailored to learning particular applications (e.g. how to use a particular digital technology), then successful learning progression could take place. Computer-based experiential learning (CBL) has been a very successful way to learn. A key to optimizing attention, performance and learning is that learners should be stimulated during the learning process (Shelbourn, 2002).

The Instructor and Student Computer Class Model

The instructor and student computer class model is another widely used method for learning. Orlich et al (2010) proposed the notion of teaching as a helping process and learning community. It holds that instruction should be a systematic process

that consists of strategies, methods and techniques. This may comprise of specific steps to achieve something. It states that teaching is also a process of "reflective inquiry", and that active participation in learning via the student is important.

Informal Methods of Teaching

The course design is an important aspect to consider as shown in Taylor et al's (2004) training study. The study found that older adults who used application training preferred an informal structure instead of a formalized and linear class structure. It allows for a slower pace in course progression as well as having more control over learning schedules. Taylor et al's (2004) research suggests that one way to provide a less formal course structure is to integrate interpersonal dialogue and interaction.

A University of the Third Age (U3A) Australian study carried out by Swindell (2002) found that some learners were more passive in their informal approach (e.g. they were more observational) whereas other learners engaged more extensively with the process. However, it should also be noted that older adults also prefer more traditional and formalized class structures.

To summarize the learning and support mechanisms, older adults prefer to learn via both informal (e.g. by asking friends, family and work colleagues) and formal methods (e.g. by participating in a course). There can also be a combination of informal and formal methods to learn (e.g. by informally collaborating with class mates to achieve a formal web based course task). A key component of successful learning is via facilitation or moderation via an instructor to direct or influence older adult's learning.

Using a Modular Instructional Design Approach in Virtual Environments for Learning

It is important to adopt a systematic and structured way of learning to achieve successful learning outcomes as detailed

in this section. A modular instructional design approach has when used in a virtual environment medium as a form of learning. It has a structured and methodical manner.

Programmed instruction is where material is delivered in a logical sequence. It can be delivered via an ICT and be used to train individuals simultaneously (McDonald et al, 2005).

Interactive learning originates from distance education and is based upon a learner centered approach. The learner can learn via virtual interaction. The instructional modalities can include learning via video conferencing (Baggaley, 2008). This takes a more activist approach in which the learner engages with the experience. The activist approach is a main learning style and involves learning via experience (e.g. experiential learning). It involves two aspects: 1) The actual participation from the activity and 2) The knowledge or learning that is derived from it. A key element to learning from the experience is reflection. It enables an individual to learn from the experience as well as to identify any need for some specific learning before further experience is required (Shelbourn, 2002).

Proposed Project Design is a sub method which makes use of learning modules. A key method of successful learning is to reduce the task into smaller sub components and complete each sub component to complete the overall task. Such a design makes use of the Attention, Relevance, Confidence and Satisfaction (ARCS) model which is described: Attention, Relevance, Confidence, Satisfaction (Learning Theories, 2010)

Using a Constructivism Approach with Collaborative Community Virtual Environments

Constructivism is where learners actively construct and reconstruct knowledge out of their experiences with the world. It argues that learners are more likely to become engaged when they are working on personally meaningful activities and projects. (Kafai et al, 1996). Such knowledge creation can be carried out

from learning in a virtual community. In particular, two virtual settings have become very popular ways of communicating with others (either known or unknown) in a virtual collaborative community setting. These are: virtual chat discussions and virtual social networking. A main motivation for older adults to want to learn to use ICTs is due to the communication facilities that it offers (Trentin, 2004).

An interpretive study (based on a multi-method approach on practices and assumptions of qualitative enquiry with 11 participants) on online communities of practice was carried out by Gray et al (2004) to support informal work based learning. Motivations to participate included: Learning new skills; learning new work practices; establishing social and professional connections and reducing isolation. As such, there are a number of advantages with participating in virtual social learning environments (such as establishing friendships) and learning in an entertaining way. The main findings from the interpretive study by Gray (2004) included:

- The virtual environment served as a successful community of practice for informal learning
- Participation was again important for such practice
- The moderation (e.g. someone such as a teacher who can facilitate the informal learning process) is important in enhancing the functioning of the community.

Virtual Social Networking for Learning and Web 2.0 Technologies

Within the past few years, virtual social networking has grown rapidly. The social networking website Face book for example has around 500 million user's world wide (Los Angeles Times, 2010). Such an application is a Web 2.0 technology. These are technologies which the user interacts with, that may also include the communication with others. Web 2.0 technologies include Social Networking Applications and Wikis which are WebPages that can be edited by any user (Ebersbach et al, 2006).

Informal collaboration requires activity by all participants and results in the change and working of ideas to create new knowledge (Scardamelia, 2002). Such an activity can be taken advantage of by a Web 2.0 social networking platform. An older adult learner can also work at their own pace, as well as learn in a potentially entertaining and non traditional manner. This can be conducted with friends, and is an effective way to communicate and learn.

Mobile Technology for Learning

In the UK mobile phones are more prevalent than the computer (Ofcom, 2010). The inception of third generation (3G) technology has allowed for mobile phones to incorporate facilities such as the internet and social networking applications. Therefore Web 2.0 technologies such as Face book can be accessed with these mobile devices. This makes such a technology a good platform for learning. There are five main properties of mobile devices that provide opportunities from an educational context. These are: (1) Portability; (2) Social Interactivity; (3) Context sensitivity; (4) Connectivity; (5) Individuality (Klopfer et al, 2002).

Mobile devices offer a great opportunity for learning with respect to ICTs by older adults. Such devices also incorporate social networking facilitates. Social networking is a platform utilized by older adults (as well as other groups) who want to learn and use ICTs and their applications (Bogatti et al, 2003). The older adults can learn virtually, with their friends, family or colleagues. A mobile device that may be of significance to older adults is the Apple iPad. Its vertical and horizontal dimension is generally a lot larger than mobile phones, although its depth is considerably smaller in comparison. It can easily fit into a bag and so has good portability. It also has "Universal access" integrated into the phone to enhance its accessibility, particularly for those with usability and accessibility issues (Apple, 2010). See figure 4 Apple iPad is shown in Figure 4:



Figure 4: The Apple iPad (Apple, 2010)

Conclusions

Informal methods are a popular and widely used choice for learning ICTs among older adults. However, more structured and traditional approaches are also widely adopted. The integration of an informal approach (e.g. collaborating with friends) and structured course (e.g. to have milestones as deliverables and be facilitated by an instructor) could prove a very successful learning and support mechanism for older adults in learning how to use ICTs. Virtual learning via mobile devices in an informal collaborative setting could prove a very successful

method of learning. This is mainly influenced by the facilities that are on offer e.g. Web 2.0 technologies. Finally, everyone is an individual with a wide range of learning preferences and capabilities. The aim is for an older adult to explore alternative methods, try them out and engage in effective and entertaining learning based upon this.

REFERENCES

Anderson, S. (2008). *The Association for Education and Ageing, Research*

- Publication*, Leicester University, Later Life Learning: A Review of the Literature
- Apple iPad (2010). *iPad* [Online] Available At: <http://www.apple.com/ipad/> [Accessed: 04 November 2010]
- Bagaley, J. (2008). *Where did distance education go wrong?* *Distance Education*, 29, 1 39-51
- Bogatti, S., Cross R. (2003). *A Relational View of Information Seeking and Learning in Social Networks*, Boston College and University of Virginia (49), 4 pp. 432-445
- Ebersbach, A., Glaser, B., Heigl, R (2007). *Wiki: Web Collaboration*. Springer-Verlag: Germany. Entlich, R.
- Findsen, B (2002). *Developing a conceptual framework for understanding older adults and learning*. New Zealand Journal of Adult Learning 30 (2), 34-52
- Goodman J, Syme A, Eisma R (2003) *Older Adults' use of Computers: A Survey*, Department of Computing Science, University of Glasgow
- Gray, B., (2004). *Informal Learning in an Online Community of Practice*. *Journal of Distance Education*, 19(1), pp. 20-35
- Kafai Y, Resnick M (1996) *Constructionism in practice: designing, thinking and learning in a digital world*. Lawrence Erlbaum Associates Inc.
- Klopper, E, Squire, K and Jenkins, H (2002). *Environmental Detectives: PDAs as a window into a virtual simulated world*. Proceedings of IEEE International
- Learning Theories (2010). *ARCS Model of Motivational Design (Keller)* [Online] Available at: <http://www.learning-theories.com/kellers-arcs-model-of-motivational-design.html> [Accessed: 24 February 2011]
- Los Angeles Times (2010) *Face book tops 500 million users world wide* [Online] Available at: <http://articles.latimes.com/2010/jul/22/business/la-fi-facebook-20100722> [Accessed: 24 February 2011]
- McDonnald, J, Yanchar, S. Osguthorpe, R. (2005). *Learning from programmed instruction: Examining implications for modern instructional technology*. *Educational Technology Research and Development*, 53, 3, 84-98
- Ofcom (2009), *Digital Lifestyles, Media Literacy Audit, Research Document*, United Kingdom
- Ofcom (2010), *Communications Market Report, Research Document*, United Kingdom
- Orlich et al (2010) *Teaching Strategies: A Guide to Effective Instruction: Ninth Edition*, Wadsworth Cengage Learning, pp 1, 4, 21
- Rakap S. (2010). *Impacts of Learning Styles and Computer Skills on Adult Students' Learning Online*. *The Turkish Online Journal of Information Technology*, 9(2), Department of Special Education, College of Education, University of Florida
- Scardamelia, M. (2002). *Collective cognitive responsibility for the advancement of knowledge*. In B. Smith (Ed.) *Liberal Education in a Knowledge Society* (pp.67-98). Chicago, Open Court.
- Shelbourn, M. (2002). *A computer-aided learning application to train inexperienced building surveyors in building pathology using virtual reality*. [Salford]. PhD. Thesis , University of Salford.
- Swindell, R. (2002). *U3A online: A virtual university of the third age for isolated older people*. *International Journal of Lifelong Education*, 21(5), 414-429.

Taylor, S. A., Humphreys, M., Singley, R., & Hunter, G. L. (2004). *Business student preferences: Exploring the relative importance of web management in course design*. *Journal of Marketing Education*, 26, 42-49

The National Service Framework for Older People (2006). *Living Well in Later Life – A review of progress against the National Service Framework for Older People* pp. 5

The Office for National Statistics (2010). *Population, Ageing* [Online] Available at: <http://www.statistics.gov.uk/cci/nugget.asp?id=949> [Accessed: 24 February 2011]

The World Health Organisation (2010). *Definition of an older or elderly person* [Online] Available at: <http://www.who.int/healthinfo/survey/ageingdefnolder/en/index.html> [Accessed: 24 February 2011]

Trentin G (2004) *E-learning and the third age*. *Journal of Computer Assisted Learning*, 20, pp. 21-30

Vincent, J. A. (2007). *Science and imagery in the 'war on old age'*. *Ageing & Society*, 27, 6, pp 941 to 962.