E-learning and over 65s: designing for accessibility and digital inclusion

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1. Background

The Open University (UK), in collaboration with Age UK Milton Keynes (UK) and Jisc TechDis (UK), has been investigating the role of online social interactions in supporting people aged 65 or over to avoid or overcome social isolation, to maintain and develop social connectedness, and to build supportive relationships and companionship. These online social interactions could be via email or Skype or participating in online communities such as on Flickr, Facebook, Twitter and YouTube. As part of this research project (http://crc.open.ac.uk/Projects/OlderPeople-BeingOnline), we are investigating accessibility, usability and online safety aspects which have been identified as being the key obstacles in their online engagement and positive user experience. In essence, platforms for online social interactions are not designed for older people and are not in any case accessible to many people including those with disabilities. There are implications from our projects for designing e-learning environments for people aged over 65 and in our paper we examine these further.

We will firstly set out the scope of our study, followed by a consideration of the demand for e-learning by and for over 65s and their physical and non-physical characteristics. We shall then discuss the extent to which these aspects apply to e-learning and how a digital inclusion lens rather than an accessibility lens can help shape the design approach.

2. Scope

We are focusing our study on older people over the age of 65 who have engaged or are engaging in learning such as that available from The Open University (a formal multi-faceted distance online learning experience). However in the future this may be less formal through a Massive Online Open Course (MOOC) such as FutureLearn https://www.futurelearn.com/. We recognise that the age range of 65+ could realistically span 30 to 40 years and that a person's characteristics can change considerably over this period.

3. Over 65s and e-learning

In the UK, 10.3 million people are aged 65 or over and this number is projected to increase to over 16 million in the next 20 years (Age UK, 2013). In terms of learning, 23% of people aged over 65 regard themselves as having undertaken formal or

informal learning during the last three years (Aldridge and Hughes, 2012). There is likely to be a significant increase in the number of over 65s engaging with e-learning over the next 5 to 10 years. The reasons for this include:

- The population of older people is on the rise.
- Access to e-learning is increasing with more opportunities for learning online.
- More over 65s will have had experience of e-learning so they will be more likely to engage in the future.
- There has been an increase in the number of people working longer.
- People might change careers later in life.
- There is no age limit for fee loans in the UK.

The W3C (2010) states that age-related difficulties 'overlap with the accessibility needs of people with disabilities.' Whilst we concur with this overlap, simply meeting the accessibility needs of disabled people will not address all of the needs of older people. As Sloan (2006) posits, there is a failure to encourage consideration of context. In any case the W3C focus is on the design of websites rather than on e-learning.

3. Characteristics of over 65s relating to e-learning

Over 65s constitute a widely diverse group and one, or some or none of the characteristics associated with older people may apply to an individual. Indeed, Craddock (2012, p. 12) argues that a major obstacle in adoption of technology by older generations is that older uses are wrongly perceived as a homogenous group.

3.1 Non-physical characteristics

Objectives and motivation for engaging in e-learning
For some who have recently retired there is the opportunity to pursue interests as a leisure activity. For some they may have to engage if they are still working.

Experience with technology
Over 65s will have variable experience and skills in the use of technology and with e-learning. An older person retiring now or over the last five to ten years is quite likely to have had some experience of using a computer in the workplace. At the other end of the scale there may be people who have never used a computer.

Confidence with technology
Some older people will lack confidence in their use of technology, which may relate to lack of experience and with learning. Online safety aspects such as scamming, spamming, security and privacy have been identified as concerns in our project which may affect confidence.

Flexibility/time
Many over 65s have extremely busy life styles: some will still be working and/or looking after families or involved in voluntary and community work. Others may be living in isolation with limited income and large amounts of 'free time.'

Income
There are many people who want to use the internet but are not able to afford it and will, therefore, not be able to engage in e-learning.

3.2 Physical Characteristics

As a person gets older they experience declining age-related impairments including declining vision, hearing, physical ability and memory loss. This may affect their ability to engage in the use of technology and therefore e-learning.

In the MyUI project (2013), a set of user physical characteristics is put forward as being relevant factors for the user interfaces when designing for an older person. This set highlights the range of characteristics across what is potentially a wide age range and focus on the diverse needs of all end users and the changes that might occur across time for an individual. Sayago and Blat (2009) in an ethnographical study of older people using email found that cognitive load is the most significant barrier for older people in online interactions.

However it is not all doom and gloom and as a person gets older they may develop strengths such as reasoning ability and time management skills which can help counter many of the aspects discussed above (Sharit et al., 2011).

4. Applying a digital inclusion lens

When considering the e-learning design needs of over 65s, the accessibility solutions, such as designing to reduce cognitive load relate to physical characteristics and therefore the W3C guidelines are appropriate and comprehensive. However, W3C guidelines do not address the non-physical characteristics.

According to Seale (2013) writing in the context of e-learning and disability in higher education, an accessibility lens focuses on barriers and what a person cannot do rather than the digital inclusion lens which focuses on opportunity and what a person can do. The digital inclusion lens embraces user ability, agency and motivation, control and choice. In addition, can be a useful tool in considering the wider student experience such as recruitment, selection and support.

In our current study we are carrying out interviews with over 65s engaging in e-learning to explore the motivations, barriers, advantages and disadvantages they have encountered in their learning experiences. The results and analysis will be available at CSUN (2014) and will be used to supplement the conclusions and recommendations set out below.

5. Conclusion and recommendations

In summary the design of e-learning for over 65s should encompass a digital inclusion approach rather than just an accessibility approach to meet the needs of this frequently overlooked but expanding and diverse group of learners. Specific points to consider include:-

- The design of e-learning environments needs to consider over 65s' physical and non-physical characteristics.
- Designers should recognise that over 65s' needs will change with age, more rapidly than perhaps other age groups.
- Designers should take into account over 65s' perceptions of online safety.
- Involvement of over 65s in the design process, designing to reduce cognitive load, training involving repetitive strategies, and on-going trustworthy technical support are fundamental to ensuring that the person can access and engage successfully with e-learning.
- Future work should bring more focus to the strengths of over 65s, rather than their weaknesses.

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