



BENEFITS OF SECOND LIFE IN THE AGEING POPULATION

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The Internet, now central to our economic, cultural, and political lives, is used to deliver public services, personal communication, and as a vast source of information and entertainment. The United Nations estimates that one-third of the population living in developed regions and one-fifth in developing areas will be aged 60 and over by 2050. The task of addressing the well-being of people in their old age is a massive one now faced by governments and local authorities.

In this chapter I discuss studies that were conducted with elderly participants from the Gaer and Stow Hill communities (Newport, UK), which has the largest proportion of seniors in Wales (Office for National Statistics, 2001). I also highlight the need for specialized training and continuous support for the elderly who must feel secure in using digital technologies. This study further illustrates that regardless of the individual being a novice or advanced internet user, training and support for digital technologies is an important factor and essential for them to continue to be regular users.

Background

The world's population is ageing drastically—every second, two people turn 60. By 2029, one-third of Europe's population will be over 60 years old, with Japan and North America following close behind (United Nations, 2008).

The ageing population presents major economic and social challenges to governments, such as the enormous demand it has on health and social care services, but these resources are essential as they help to provide the elderly with richer and more fulfilling lives.

The definition of what is considered a virtual world has long been discussed and argued within academic research. Most definitions of virtual worlds require that

1. virtual worlds should be persistent and shared by a large number of users;
2. interactions in virtual worlds are fed back in real time to users who are represented via avatars (Siriaraya & Ang, 2011, p. 2).

One such virtual world is Second Life, an avatar-based social network. Users in Second Life can not only socialize with other users but also participate in activities such as purchasing and creating virtual goods such as clothes. Most research conducted about virtual worlds focuses on mainstream users, who are usually teenagers or young adults (Yee, 2006).

Deep interpersonal relationships can be found inside virtual worlds—researchers have pointed to the existence of romance (Winder, 2008) and support groups (Norris, 2009) in these environments. Other studies have identified communication, cooperation, and collaboration as important determinants to user acceptance of virtual worlds (Siriaraya & Ang, 2011, p. 2).

Problems Supporting the Ageing Population

It has been forecast that the “50 and older” population will grow 68 times faster than the total population between 2000 and 2050 (Heet, 2003). In the UK alone, by 2020 over half of the population will be over 50 (BBC News, 2008). Thus there is a growing need to address how the ageing population interacts effectively with advancing technologies and its benefits. The world’s population is living longer, but disability, old age, and less available wealth create barriers that prevent access to further education, impede understanding of health issues, increase social isolation, and reduce well-being.

Advancing Technologies

The world’s population is living longer, which means an increasing proportion will have to remain in the workforce for longer as well. New digital technologies such as distance learning and the Internet have been widely used in order to make learning accessible to the public and the elderly, with different age groups using information and communications technology (ICT) in different ways. In the twenty-first century there are emerging and exciting new technologies that could help increase older people’s participation in daily life, such as high-speed broadband Internet access, social networks, and virtual worlds. If this demographic is shown how to use these technologies correctly, it would

improve their social interaction, lifelong learning opportunities and sense of control. For example,

- Social interaction: new ways to interact with family, friends, and communities. For instance, Cesta et al. (2010) used robotic platforms for tele-presence with features enabling social interaction.
- Learning and skills development: new lasting skillsets for motivation and personal development; these could include learning services, communities, or technologies tailored to older people. They could use technology to provide their experience and time to teach students of all ages, regardless of their location (Maurer, 2003).
- Increased personal control: enhances older people's participation in society, whether by learning new skills, engaging in hobbies, or using advanced digital technologies (Kostka & Jachimowicz, 2010).

Edutainment and Infotainment

Important educational tools for the future include games, virtual worlds, and entertainment that educates while being enjoyable, allowing people to learn through examples. Generally they combine experiences of entering a fantasy world and manipulating the features or characters in an animated environment in the form of a game or story. Typically, stories and gaming are central, with simulations creating a learning environment that is as entertaining as much as it is educational (Henry, Douglass, & Kostiwa, 2007).

Beyond gaming are the virtual worlds such as Second Life (Kumar et al., 2008) and unlike online games, these virtual worlds offer a faultless continual world where users can freely roam as avatars of themselves, without predefined objectives. Younger users find navigating and roaming through virtual worlds, engaging in new social interactions with strangers, and dynamically changing content unproblematic, but with the cognitive declines of older adults, this can make learning and use of such technologies very challenging. Older users also do not cope well with hidden functionality in interfaces (Sa-nga-ngam & Kurniawan, 2007).

Community-Based Training for the Elderly

Training sessions were conducted in the low-income communities of Newport (UK) with a group of 20 elderly individuals. They were introduced to Second Life and the benefits associated with this virtual world.¹ The success of the training led

¹ The name of the Second Life island used by the students is IDL Newport Hub.

us to implement and design a pilot study (Chilcott & Smith, 2011) for two women over seventy-five years old from the training group. It provided one-to-one training lasting for three weeks (Figure 5.1), meeting once a week for two hours, and thereafter meeting regularly in Second Life for island-hopping and chat. Twelve months after the first training session, we revisited the pilot study participants. We were interested to hear if they were still using Second Life (or other digital tools) as a tool for edutainment and its social aspects. Finally, with the two pilot study participants acting as mentors, we provided another training session for a group of eight elderly individuals. The average age of the participants was 64.5 years old, with the youngest participant being 50 and the oldest being 79.



Figure 5.1 The real and virtual participants using Second Life.

Objectives and Aims

The main objectives and aims for the community-based Second Life training sessions and pilot study were:

1. To provide effective training and support to the community using Second Life: We found engagement was one of the most crucial factors. Effective training provided the users and local communities with the appropriate start-up skills and initial confidence to use Second Life. Effective support requires an approach such that all questions are treated with respect and understanding. Without this, a firm foundation for ongoing learning would not have been created, affecting the success of the project.
2. Provide new learning and interface methodologies for the virtual worlds tailored to the ageing population: Older users often need more assurance,

and their anxieties and fears are often compounded by computer problems that may be mere annoyances to younger, more experienced users. The elderly typically require more time and coaching than younger users, and we discovered that it was very challenging for this group to use the mouse and look at the screen at the same time. Second Life has many interfaces, fast-moving graphics, and “real life” interactions (which the older users found terrifying initially) that would have resulted in disengagement if all of the above had not been planned for and catered to by the project (Fisk, Rogers, Charness, Czaja, & Sharit, 2009).

3. Determine if virtual worlds enhance well-being and reduce isolation in the ageing population: As well as the older population’s financial and health status, subjective measures of their well-being and quality of life can be sensitive to major life transitions such as retirement, and such subjective measures aid our comprehension of these issues. (RAND, 2001)
4. Determine if virtual worlds enhance appropriate lifelong learning for the ageing population: There are areas in SL for learning that could help improve the financial and social long-term needs of an ageing population.

Approaches

Training Methods

Group-based training provided the means to introduce the elderly individuals in the study to the benefits of Second Life in a secure environment where they felt comfortable. Those interested in exploring Second Life on their own were supported with one-to-one training, so that they could address any issues that may be affecting their performance without fear of being judged.

Interview Methods

In order to understand the engagement of older people in virtual worlds, we carried out qualitative semi-structured interviews with those who were using or interested in using Second Life.

Qualitative Research Methods

These methods allowed us to identify how users perceive and use a particular technology (Cairns & Cox, 2008). This was useful for us to achieve an in-depth understanding. Specifically, semi-structured interviews were appropriate

because their flexibility allowed us to formulate a generalized understanding of various issues related to elderly users in virtual worlds (i.e., Second Life).

Interview Structure

The structure of the interviews gave us a broad understanding of the factors perceived by older people to be important in their interaction within virtual worlds. We constructed our interview questions to cover a range of dimensions:

1. Elderly users: Their demographics, characteristics, interests, anxieties, and usage patterns of virtual worlds (if any).
2. Social interaction: Factors that affect the formation and maintenance of relationships for older people in virtual worlds and issues they perceive to be important in communication and socialization.
3. Education: Could they see the potential of using virtual worlds to gain knowledge, such as visiting heritage sites or exploring areas with information about health-related issues?
4. Benefits: What were the benefits perceived by older people in using virtual worlds?

Interface Learning and Design

Designing new interfaces for virtual environments would first require us to understand how elderly users perceive and prefer to interact and socialize in such environments. This knowledge could be used as a reference for further research and help designers create virtual environments that better match their preferences and requirements.

Findings and Discussion

Objective One: Training

In the first training session there were 20 elderly users who participated in the interview. Of the participants, 15 were female and 5 were male. Most of the users (75%) reported themselves as not being frequent users of Second Life or hadn't even heard of it. Of the elderly users who said they were comfortable with using computers and the Internet, most used Skype and email as communication tools.

When analyzing the results from the study of those using virtual worlds, we found a number of interesting themes. A large percentage of older people who have started using SL were in some way limited in mobility either due to a

physical disability, the effect of old age, or not being willing to go out at night. This was one of the reasons for them being interested in learning about and using virtual worlds. We discovered that participants in the interviews were willing to learn more about virtual worlds, which indicates that some older people are indeed interested to learn about a new technology (Czaja & Lee, 2007).

Objective Two: Interface Design

During the study, our analysis revealed that the keyboard and mouse navigation commands used to control avatars were mastered by most of the participants; but we also discovered that some navigation tools in Second Life may be unsuitable for exploration by older users. For example, some participants indicated that at times they felt confused and puzzled when attempting to fly around the virtual spaces, and on several occasions experienced an emotional upset similar to feeling lost in the real world. This requires additional investigation, as walking, rather than flying, was indeed deemed to be the favourite technique for manoeuvring around. Perhaps this may be because elderly users have a strong emotional connection to their avatars, regarding them as real entities rather than just virtual digital characters.

Since the pilot study, the interface of Second Life has changed dramatically (with no obvious feedback or informed consent of the users). Linden Labs significantly updated their software, and this has confused elderly participants. With the interface change and no re-training, they felt uneasy with the technology and too afraid to continue to use Second Life as they had before. They said that the interface was not familiar and the new design was directed toward the younger population of users. To support their conclusion, their grandchildren had no problem adjusting to the interface change, but for the elderly users it was too much and they lost interest.

Objective Three: Social Interaction

Ageing and mobility barriers continue to influence the elderly with how they maintain real-world social contact over time. For many, their social activities are increasingly restricted to daytime appointments due to growing levels of fear and apprehension attributed to leaving home after dark. From our analysis, we noticed that older people at first seemed embarrassed when interacting with other avatars, and had feelings of wariness about providing appropriate responses. After independent and regular usage of Second Life, having regular daytime meetings with their virtual friends and supporting one another in communication and navigation mechanisms, their confidence grew.

During the study we discovered that the elderly identified with their avatars as “themselves” (as real people) rather than digital beings, and they had strong bonds of embodiment and feelings about their digital characters. For example, when the participants were exploring the islands and meeting new and unfamiliar avatars, it was apparent that on occasion they experienced a sense of uneasiness because of unsolicited communications from others. This raises questions about whether there is a need to protect future study group participants from uncomfortable interactions and if a more secure and safe environment should be introduced.

The main disadvantage of using Second Life from an elderly point of view was the uncertainty of the virtual world. They did not like talking to or following an avatar they did not know. Instead, they preferred to know the avatar by his or her real name or be able to recognize him or her (e.g., facial features). Once again, this mirrors older users’ behaviour in the real world, where they would not approach a stranger and start talking to them.

Objective Four: Well-being

Second Life is a unique communication environment, where users who are actively absorbed in the virtual world can become emotionally involved with other avatars (Taylor, 2002). Although it is only digital interaction, the feelings created can be equal to those found in everyday existence. While real-world social interaction is available to seniors at the community centre (through attending clubs), it does not impact on the real life experiences of the majority of the community’s inhabitants. This is due to a lack of confidence and social barriers, with elderly residents becoming increasingly housebound in their later years.

We discovered after watching elderly users partaking in several digital trip experiences that they found many of the virtual places they visited exciting; however, the group also thought that the design and artistic experiences of these virtual islands were more often developed for a younger audience’s taste. Thus, perhaps there is a need for new design methodologies tailored to elderly subcultures (Boellstorff, 2008). This view is in conflict with elder users’ desire for youthful (younger-looking) avatars and indicates that virtual world design is a significant feature in ensuring well-being and continuing social interaction in virtual places for this age group. In summary, there is a need for additional studies to examine the reasons for (and the impact of) looking younger in Second Life, rather than simply using an avatar that more closely resembles a user’s own (actual) age.

Objective Five: Edutainment

The elderly community's learning experiences in the Newport area have taken a number of forms. For example, the local history clubs are well attended and there is a focus on lifelong learning. These learning experiences are driven by demand and are regarded as flexible and smooth. The ability to exploit the immersive medium of Second Life offers a novel prospect for improved lifelong learning opportunities customized to the elderly's cultural interests and well-being. Figure 5.2 shows avatars from the study exploring an island for educational purposes.



Figure 5.2 Exploring the historical islands in Second Life.

Feedback from this study and the community training provided a surprising finding. Social interaction was not a priority for the group. Instead, individuals were more interested in the educational aspects of the virtual world, such as visiting islands that had a historical point of interest. They wanted to explore areas of historical interest and gain knowledge about these sites, since in the real world visiting such places would be impractical due to costs and problems with mobility (e.g., wheelchair access).

Benefits

The elderly users viewed virtual worlds as a kind of enabling technology (Winder, 2008) that helped remove age-related limitations. Second Life allowed them to

enjoy activities that were no longer possible for them in physical life, such as visiting historical sites. SL models these sites in 3D (in present or simulated ancient times), which allows the elderly to visit them virtually.

Future Directions and Conclusion

We hope the findings from our study could be applied to develop better virtual worlds and web-based interfaces that are tailored to elderly users as well as to younger adults.

Lifelong learning goals should be individually relevant and significant to the user, conducted in environments that provide a cost-effective direct learning approach that allows the participant to manage and have control of the learning process. Many adults over the age of 50 have realized that the enjoyment of learning often allows them to enhance their spiritual and personal development, and also allows them to become more aware of worldwide issues. The study clearly shows that Second Life is a tool that could enhance learning and entertainment. Mature adults favour learning techniques that provide easy access to resources, require small investments of their own time and expense, and allows them to begin learning without any major delays once they have decided to start the process. Second Life is a freeware online application that incurs no direct cost to the user (unless he or she purchases an island), but it does require a small investment of time for hands-on training.

Our elderly adult learners (regardless of age, gender, income, and education differences) normally preferred group-based learning methods, which allowed them to become more involved in their communities. However, a few keener participants were still willing to take part in smaller groups in order to gain extra exposure to and experience of Second Life.

More research is required for comprehensive study into the factors causing the digital exclusion of older people, using surveys with larger sample sizes, qualitative research, and Internet usage. The aim should be to develop a more detailed understanding of the factors specifically influencing older people, and exploring the types of content likely to encourage them to interact via their usage of the Internet and virtual worlds.

There is proof that the elderly are less likely than their younger peers to be stimulated by or engaged in virtual worlds, but when they do they have the potential to reap considerable benefits, such as increased social interaction, well-being, and edutainment. There is also evidence that there are sizeable

numbers of older people who are perhaps not having the amount of fun or social participation that they desire or deserve.

It is evident that immersive virtual environments have also not been fully explored or used as a possible positive technology that can be utilized as a social tool in addressing remoteness and edutainment (for elderly participants) in the information and digital world. For additional research we propose a focusing on extending present real-world social activities for older people, and developing a customized virtual context to help determine their suitability for the elderly; and identifying effective methodologies to apply Second Life training in a home environment in order to meet the well-being and active living challenges faced by our ever-growing elderly population.

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