

# Technology, fun and games

Clare Cutler, Ben Hicks and Anthea Innes share some early lessons from running technology groups for people with dementia

With the advancement in technology, researchers are beginning to explore various avenues where technology can be used to support and improve the well-being of people with dementia by keeping them physically, socially and mentally active. Commercial 'off-the-shelf' technology appears to be a viable option as it is cheaper than more dementia-specific technology and more readily available. Preliminary research has also shown it can be effective at improving the lives of people with dementia through increased engagement, mental stimulation and social interaction (SCIE 2012, Upton 2011, Leahey & Singleton 2011, Leng *et al* 2013). However, further research is required to understand how this technology can be used with people with dementia within group settings.

The aim of this article is to report on two technology groups commissioned by Bournemouth Borough Council and discuss our observations of using commercial technology with people with dementia within the community and an assisted living care setting.

## About the project

In 2012, Bournemouth Borough Council commissioned the Bournemouth University Dementia Institute (BUDI) to deliver and evaluate two technology clubs for people with dementia. One group was for residents of a Dementia Specific Assisted Living Accommodation (DSALA) and the second group was aimed at people with dementia living within the community (DC). The purpose of these time-limited

clubs was to encourage older people with dementia to socialise, relate to and converse with others in similar situations and to build relationships with carers and support workers in a creative, informal and fun environment. Commercial off-the-shelf technology such as the Nintendo Wii, Nintendo DS and Apple iPad was used to facilitate this process. In total, 14 technology sessions were delivered to 13 people with dementia, led by two facilitators from BUDI both of whom had basic knowledge of the technology and the games. The sessions lasted for two hours and were delivered weekly (six consecutive weeks for the DSALA group and eight consecutive weeks for the DC group) in late 2012/early 2013.

Throughout the sessions data was collected through various methods: ethnographic field notes and observations, end of session group discussions and evaluation feedback forms from people with dementia and informal and formal carers. We discuss here our observations of running the technology clubs and using the technology.

## Implementation

The technology sessions lasted around two hours. This proved enough time to introduce the technology, the games and to have a tea break. All but one of the participants commented that the sessions were "too quick" or "not long enough". This may be partly due to the range of technology used or because participants were engaged with the activities and enjoying the experience.

Feedback forms at the end of each session encouraged

participants to state how they would like to use the technology in subsequent sessions. For example, one participant had relatives who lived in New Zealand and they would regularly bring in their address book and work with the facilitators to explore these addresses using the iPad and the Google Earth application.

## Using the technology

### Nintendo Wii

The Nintendo Wii was introduced to both clubs. A large screen was placed at the front of the room and chairs were located around the outside. This allowed all participants to see the screen while still providing enough space for the player to interact with the game. This set-up encouraged conversation in the group and helped to generate interest in the games.

New games were played weekly and so participants were shown new button and movement combinations. The participants did not have any problem with adapting to this as long as repeat demonstrations were provided. As the sessions progressed, the participants became more familiar with the Wii and started to correct themselves when a mistake had been made. For example, one participant when playing the bowling game commented when she knew she had or hadn't pressed a button at the right time, and kept correcting herself so she understood what she needed to do. When she had mastered the action she then began to advise other participants on how to 'throw the ball' and the buttons to press.

For the DSALA group, the success of the Wii games was dependant on the game's pace,

usability and 'fun' factor. Bowling, hula-hooping and an ice cream balance game were the most popular participant requests. These were slower games requiring relatively simple actions. Games that required more precise hand-eye coordination or were fast paced were not enjoyed as much. In contrast to this, the success of the Wii games in the DC group was not dependent on pace and ease. Participants were equally eager to try challenging games as well as those which seemed simpler. The participants quickly understood the concept of all games and those that required no button combinations but relied on movement alone were most popular. Although games which were fast paced such as Mario Kart were understood and completed with no problems, participants did comment that there "was a lot of movement for their eyes".

### iPad

The iPad was often introduced to participants on a one-to-one basis with the facilitator or within small groups. The participants at the DSALA group had little interest in the applications for the iPad but the apps did create a catalyst for conversation and allow participants to work together to explore areas of interest. Within these sessions, the iPad was used to spark conversation or reminiscence (by showing photographs of previous sessions) and participants were more interested in this than navigating the screen or playing games themselves.

In contrast the DC group were more engaged with and confident using the iPad. Once the technology was demonstrated to them they

were able to use it and navigate their way around apps independently. All participants commented that they found the iPad easy to use and enjoyed exploring the different games and applications. However, one participant did comment that they found it challenging on occasions to move their finger across the screen as it kept “sticking” or “shaking”.

### Nintendo DS

The Nintendo DS was introduced to participants on a one-to-one basis with the group facilitators. While some participants in both the DSALA group and the DC group were able to understand the technology and play the games unassisted these tended to be in the minority. Many participants required continual assistance to use games such as Cooking Mama and the Arts Academy, as the DS proved difficult to navigate around once a game was inserted and the games had numerous pages of instructions. The design of the DS also appeared to hinder participant’s engagement, with many commenting that the screen was too small (and the text size) in addition to the small buttons they were required to press. Inevitably many participants became frustrated with the technology and only one person continued to use it after session three. One participant who came from an artistic background enjoyed playing the Arts Academy game but commented that “it doesn’t let you add much detail”.

### Discussion

Both groups proved to be successful at engaging all participants with technology to some extent. Adopting a person-centred approach and understanding the life histories, hobbies and current interests of the participants was essential in ensuring the technology and the games could be tailored towards the participants’ interests. Other research has shown that

activities should reflect people’s past experiences, interests, hobbies and remaining capabilities to facilitate engagement in meaningful activities and promote well-being (Cohen-Mansfield *et al* 2009; Kolanowski *et al* 2011) and this is similar when undertaking activities using technology.



In addition to this, the groups promoted an informal, relaxed and fun atmosphere where participants were encouraged to interact with the technology without fear of failure. Technology can elicit a certain ‘fear factor’ for some participants (SCIE 2012) and some games on the Nintendo Wii stated participants had ‘failed’ or were ‘unbalanced’ when they were unable to complete the task required of them. Creating a supportive and relaxed atmosphere helped to overcome any initial apprehension regarding the technology and encouraged participants to continually re-engage with the games even if at first they didn’t succeed. Introducing technology within a group setting (such as with the Nintendo Wii) in the preliminary sessions also helped to remove some of the fear as participants could watch others take part and so feel more confident themselves when it was their turn.

Physical aspects of the gaming equipment also appeared to create barriers for the participants. The Nintendo DS screen for example was very small. Screen size impacted on the physical use of the equipment as the navigation stylus became difficult to use due to the size

of the selection menus on the screen being too small to read and select. In addition, the size of the screen made the numerous pages of information (before getting to the game) hard to comfortably read and comprehend. Similarly, the iPad screen also proved to be problematic for some as the default sensitivity settings for the touch screen were not always responsive to the participant’s touch. This led some of the participants to deem this ‘failure’ to make the iPad respond as they wished as a consequence of their incapability to successfully use the equipment. This particular challenge was easily addressed by changing the sensitivity default settings on the iPad. However, one main advantage of the iPad was that it had instant access to a range of applications (provided there was a wifi connection) making it possible to be responsive to participants’ interests and hobbies as they became apparent. This is unlike the DS and the Nintendo Wii, where a thorough knowledge and understanding of the participants’ interests was required beforehand in order to plan and tailor person-centred activities.

There were clear differences between the DSALA and DC groups in the way the participants approached and engaged with the technologies and activities. Participants of the DC group were more enthusiastic about challenging themselves in both the use of the equipment and the games, apps and software they engaged with. This suggests that environmental and cultural factors may impact on participants’ engagement with technology. Further research is required to explore how these technologies can be successfully used to benefit the lives of people with dementia taking into account individual preferences and social influences.

### Conclusion

Building on the findings from the work reported here, a



second set of technology sessions are currently taking place. These sessions are the focus of a doctoral research study and a service evaluation funded by Bournemouth Borough Council and will investigate quality of life benefits of a technology club for people with dementia living within the community. <sup>n</sup>

### References

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