

➤ enthusiastic junior staff, attending the “train the trainer” course than we otherwise would have.

When these trainers took their new-found skills back to their care homes, several homes faced challenges with implementing the training. Among the obstacles were staffing levels on the day, conflicting schedules while on duty, mandatory training elsewhere, and one home having a Care Quality Commission inspection. One trainer found that putting up lists of attendees and introducing the training in person increased participation. Space for training – or the lack of it – was also an issue; one care home used an empty resident’s room for training.

As for training on the DeAR-GP tool, in hindsight it might have been better to have gone about it differently. Because some homes already had referral pathways in place for residents with signs of dementia, it might have been preferable to discuss DeAR-GP with the manager first to review whether or not to include it in the training.

But it was clear from our study that the tool was needed. We collected dementia diagnosis rates for each participating care home and these varied from 9% to 100% (average 53%). Six out of 10 care homes had a diagnosis rate of less than 60%, suggesting there were significant numbers of undiagnosed residents in some homes or that these homes were simply unaware that particular residents had been diagnosed.

Cost effectiveness

Taking into account the cost of the “train the trainer” providers, the overall cost of each session delivered in care homes during the lifetime of the project was £870 and the cost of training each member of staff was £152. This seems expensive, but we do not know whether any of the care home trainers delivered further training sessions after the end of the project.

If the trainers continue to deliver training (as we hope) then the costs will reduce significantly. Many trainers have remained in post, which does give the potential for numbers of staff trained to increase. One trainer said: “We are keeping training ongoing... we have the resources, support from the manager and interest from staff to do this.”

We would recommend that future train the trainer projects review the long-term cost effectiveness of this approach. There are many advantages of having an in-house trainer who can do the training on-site, as it eliminates travel time for staff and does not require venue hire. Care home staff also highlighted the benefit of having training from their peers: “It was much more easy for us to understand and feel relaxed because the training was provided in the home by our staff,” said one.

Given the well-known difficulties that confront training provision like high staff turnover, there is much to be said for the train the trainer model. It provides career development opportunities for staff recruited as trainers, creates an in-house cohort of trainers who can be flexible to suit the specific needs of the home, and has the potential to overcome many of the problems rehearsed earlier. We would recommend further development and evaluation of the approach. ■

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Participating in enjoyable activities is important for wellbeing (Pressman *et al* 2009). Generally speaking, people with dementia have fewer opportunities for such activities than those without, which can have a negative effect on their wellbeing (Chung 2004). Digital technologies can be a solution, offering lots of opportunities to play games and take part in other engaging activities. Furthermore, they can be used by people with dementia (Astell 2013).

Nintendo Wii and Xbox Kinect are high street technologies that are currently being used in dementia research and care (Dove & Astell 2017). This type of technology is called “motion-based” since the player makes movements to produce actions on the screen. The movements are natural and familiar, such as raising an arm, so the technology is accessible to a wide population including people with dementia.

We are carrying out a study using the Xbox Kinect for people with dementia, which involves observing and running group digital activities in community-based adult day programmes.

Project background

To start we reviewed articles that had been published about people with dementia and motion-based technology (Dove & Astell 2017). While this confirmed that people with dementia can learn to use motion-based technology, we found that most studies did not mention how the technology was introduced to them or how they were taught and supported to use it. The technology delivered cognitive, physical and leisure activities, although

we found that most studies used it mainly for cognitive and physical activities rather than leisure. Drop-out rates were low and participants enjoyed the experience, suggesting that people with dementia find motion-based technology to be a source of entertaining activities.

The Kinect Project has three research questions:

- How can people with dementia best be introduced, taught and supported to use motion-based technologies?
- What are the effects of repeated practice on learning of skills during play?
- How does using Xbox Kinect in a group setting affect the activity?

Phase 1: Observing

As a first step to answering our research questions, we went to an adult day programme to find out how people with dementia can be taught and supported to use motion-based technologies. This particular community-based programme was chosen as it already owned an Xbox Kinect and members of the day centre regularly played on it. We observed staff teaching the 23 members (16 of whom had dementia) to play Xbox Kinect bowling one hour per week for 20 weeks. Field notes taken during observations were analysed to identify key themes in the training and playing (Astell *et al* 2016).

The findings revealed three main themes, namely the importance of a trained trainer, learning and mastery, and

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Kinecting through group digital games

Digital technologies offer lots of opportunities for people with dementia to enjoy games and engaging activities. **Erica Dove** and **Arlene Astell** describe their research project and the findings so far



Left: displaying the bowling stance. Above: Celebrating after bowling

playing “independently together”. First, the trainer.

People with dementia can learn to play Xbox Kinect bowling and enjoy doing so, but trainers must know how to introduce, teach and support them. The trainers ran the group digital activities using repeated instructions, spoken reminders, gesture modelling, and task breakdown to achieve these goals. They also offered physical support to people with mobility impairments, eg supporting them from behind, and gave praise and encouragement to everyone.

Second, as participants became more familiar with the technology and the game, they built on their learned skills to reach a level of mastery. This became apparent as players needed fewer instructions and reminders, learned to change aim and position to hit more pins, and began to teach others.

Finally, using the Xbox Kinect in a group setting increased the leisure effect of the activity. For example, participants supported each other by clapping, cheering and offering positive encouragement. While the goal of the activity was always focused on fun rather than winning or losing, participants

began to engage in playful teasing and friendly competition. This created a positive group environment which encouraged unity and socialisation among day centre members.

Phase 2: Teaching

The second phase of the project aims to apply and build on the knowledge gained from the first phase. We have been running group Xbox Kinect bowling sessions in several community-based adult day programmes for people with dementia, but this time we are taking the role of the teacher rather than the observer.

Group sessions lasting one hour are held with participants twice a week for 12 weeks using the teaching methods discovered in phase one, applying the lessons from the three themes.

We are using two video cameras which are placed at the front and back of the room. Video-recording was chosen as the optimal method of data collection as it allows us to capture all aspects of the group activity, including conversations between participants or between participants and the trainer, evidence of learning, body movements, facial expressions,

and in-game/ on-screen activity.

Preliminary findings from phase two support the themes identified in phase one.

Teaching methods picked up from phase one (e.g. gesture modelling, verbal reminders, task breakdown) are being employed successfully in phase two to teach people with dementia to use motion-based technology, even if they have no prior experience with this type of technology. And it remains important that the trainer is properly trained for the task.

As seen in phase one, participants can build on learned skills to reach a level of mastery as is evident from a reduced need for instructions, improved performance (e.g. bowling more strikes), and teaching others. Participants also learn to self-correct movement errors, change the aim of the ball to hit more pins, and develop a bowling stance.

Once again, we have also found evidence that people play “independently together”. While each person takes their turn, other members of the group clap, laugh and cheer, and make encouraging comments such as “way to go!” and “you can do it!”. This creates an inclusive and supportive environment that promotes socialisation between day programme members, staff and trainers.

Our findings so far provide supporting evidence for the abilities of people with dementia in using motion-based technology, the benefits to be derived from it, and the practicality of employing group motion-based activities in these kinds of community adult day programmes.

Future directions

Our project adds to the body of knowledge about the use of technology to challenge negative opinions and low expectations of people with dementia (Astell *et al* 2017). Motion-based technology in a group setting enables people with dementia to learn new skills and engage in meaningful activities while socialising with others. It can be both practical and enjoyable.

To translate our research into practice, we have been training day centre staff to introduce day programme members to Xbox Kinect, and to teach and support them to use it, and are creating a “how-to” manual which explains both the technical aspects (e.g. how to install the technology) and the practical aspects (e.g. how to introduce the activity). These resources will support the adoption and use of these technologies in adult day programmes once the research has ended.

We believe that this has the potential to improve the lives of people with dementia by providing accessible, meaningful group activities to increase their wellbeing. ■

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