

Video Games and Virtual Reality

M. STEELE, A. HERNANDEZ, P. JODDRELL, E. DOVE, A.J. ASTELL. *InTouch: People with dementia enjoy touch screen applications*. *Gerontechnology* 2018;17(Suppl):152s; <https://doi.org/10.4017/gt.2018.17.s.148.00> **Purpose** Evidence suggests people with dementia can independently play games on tablet/touch screen computers^{1,2}. More information is needed about how people with dementia engage with and enjoy playing touchscreen apps. According to Flow Theory, the appropriate amount of challenge to skill, a clear purpose or goal, and immediate feedback, may create a flow state, where an individual is fully immersed in the moment³. This investigation aimed to explore individuals with dementia's experience of playing pre-existing iPad games. **Method** Participants with dementia or mild cognitive impairment (MCI) were recruited from local senior's centres (n=28, mean age = 83.3 years; mean MoCA = 12.2). Previous research establishing suitability criteria for people with dementia was utilized to select games⁴. Participants were assigned to play one of two goal-oriented games, Jigty Puzzle (a familiar jigsaw puzzle game) or Bubble Explode (an unfamiliar tile matching game), for 3 sessions. Length of play, ability to complete a required element in each game, percentage of successful screen touches, engagement, measured using client eye gaze direction, and enjoyment, measured by the presence of positive or negative facial expressions/verbally in post-play interviews, were examined using Observer™ video analysis software. All clients were interviewed post-play and the interviews were qualitatively analyzed for key themes. **Results & Discussion** Of the 28 participants, 89.3% were able to play independently. One hundred percent of participants who played Jigty Puzzle were able to reach the required checkpoint in at least one session, while 80% of participants played Bubble Explode were able to reach the checkpoint in at least one session. All participants demonstrated signs of engagement and enjoyment, such as a focused eye gaze on the screen during the play sessions and positive facial expression/verbal declaration of enjoyment during post-play interviews, respectively, regardless of completion. Themes identified in the post-play interviews included appreciation/satisfaction with playing the game, challenge, desire for mastery or competence, sense of accomplishment, and flow. People with dementia or MCI can be independently engaged by and enjoy playing both familiar and unfamiliar iPad games. Despite varying abilities to reach completion and the challenges presented by the games, participants can develop a sense of accomplishment during independent play which contributes to their enjoyment and satisfaction.

References

1. Astell AJ, Joddrell P, Groenewoud H, de Lange J, Goumans M, Cordia A, Schikhof Y. Does familiarity affect the enjoyment of touchscreen games for people with dementia? *InterJ of Med Informatics*. 2016
2. Groenewoud H, de lange J, Schikhof Y, Astell A, Joddrell P, Goumans M. Experiences of people with dementia playing casual games on a tablet. *Gerontechnology*. 2017;(16)1: 37-47
3. Csikszentmihályi M, Abuhamdeh S, Nakamura J. "Flow", in Elliot, A., *Handbook of Competence and Motivation*, New York: The Guilford Press. 2005;598–698
4. Joddrell P, Astell AJ, Hernandez AM. Identifying existing, accessible touchscreen games for people living with dementia. *ICCHP, Part 1, LNCS*. 2016;9758:509–514

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Figure 1. Participant playing a touch screen game