P. JODDRELL, A.J. ASTELL. Evaluating the effectiveness of tailored accessibility settings for people living with dementia in touchscreen games. Gerontechnology 2018;17(Suppl):149s; https://doi.org/10.4017/gt.2018.17.s.145.00

Purpose Enabling independent activity can be beneficial for people living with dementia to promote autonomy, reduce boredom and to avoid dependence on caregivers[1]. There is growing evidence that people living with dementia are able to successfully use touchscreen tablet devices, and this technology is increasingly available and affordable[2]. In an earlier study, two existing touchscreen applications (apps) were tested with people living with dementia[3]. It was established that these apps were enjoyable and that people were able to use them, but design issues were identified for this population. The developers of the apps were approached and accessibility options were implemented in collaboration with the researchers (*Figure 1*). The present study evaluated the effectiveness of tailored accessibility settings for people living with dementia within Solitaire and Bubble Explode and measure the impact of these settings on their ability to initiate gameplay, play independently and experience enjoyment. **Method** In order to compare the original apps with the 'dementia-friendly' versions, a new study was conducted repeating the design of the original study. A new cohort of thirty older adults living with dementia were recruited from local care services and assigned to play either game one (Solitaire) or game two (Bubble Explode). Each participant played the same game on three separate occasions within one week. Performance on the games were compared with the results of the original study. **Results & Discussion** In Solitaire, the adaptations resulted in significantly fewer usability problems and significantly increased use of the prompt feature compared with the original version, with trends toward increased game advancing moves and increased gameplay initiation. For Bubble Explode there were no significant effects or notable trends associated with the new settings. Of the secondary measures, independent initiation of gameplay and checkpoint attainment increased (or remained at ceiling) for both the adapted versions of Solitaire and Bubble Explode. The difference in effectiveness of the accessibility settings implemented in Solitaire compared with Bubble Explode, may be associated with how closely the implemented solutions matched with what was initially proposed to the developers. Additionally, there may have been less scope for improvement with Bubble Explode, which already had high accessibility. Nevertheless, the study highlights the potential for collaboration between researchers and developers to improve the design of apps for people living with dementia, and more evidence that touchscreen games facilitate enjoyable, independent entertainment.

References

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Keywords: dementia, accessibility, touchscreen, digital
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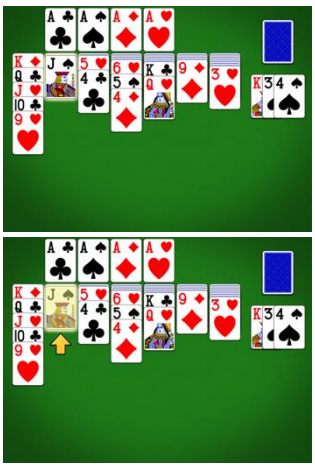

Figure 1. Screenshots of Solitaire illustrating a comparison of the prompt feature prior to (above) and post (below) adaptation to make the app more accessible for people living with Dementia