

A Screen touch game to promote cognitive and physical fitness

K. ISHIHARA, T. NAKAMURA, S. ISHIHARA. A Screen touch game to promote cognitive and physical fitness in older people. Gerontechnology 2014;13(2):217; doi:10.4017/gt.2014.

13.02.167.00 Purpose Our study proposes a memory game for older adults, similar to concentration-type card games. Initially, the game was developed as an English teaching method for students requiring additional instructional support, and was named ‘Hi! Kanzume-kun’ (Figure 1)¹. In its role as language learning tool, the player becomes more effective at using their working memory for card arrangement as word recognition skills become more developed. We have also been developing cognitive fitness games². Basic idea of this research is to study the therapeutic effects of combining a memory game with physical training on elderly participants. The aims are: (i) to encourage older adults to play the game with both cognitive and physical motivations; (ii) to facilitate interactions between participants by using a party game model; and, (iii) to allow for easy installation at gatherings or eldercare facilities. These characteristics are based on the findings of our four-year experiences of the game development¹. The objectives of the proposed game are to let players demonstrate and exercise their physical and cognitive functions, and to let players communicate with people around them during the game play. In order to enhance the physicality of the game and increase hand-eye motion and coordination, we have made the game touch-responsive, and designed it to be played on a wide visual field. **Method** The game system is shown in Figure 2. The touch-game runs in the Google Chrome browser on Windows 8. Its screen is projected onto a white wall or whiteboard. The gesture recognition middleware (übi interactive) senses hand motion via a Kinect device. **Results & Discussion** At university events, people who were assumed to be older than 70-years voluntarily visited us and played the game. Around 130 players participated in total, over the course of two events. The players seemed to be interested in the motion-sensing gameplay and enjoyed the game. We are now evaluating participants’ response to the games while continuously improving operability.

References

1. Nakamura T, Ishihara K, Furukawa A, Man-Ping Chu. Tutorial call for low-proficiency EFL learners. The 6th ICTATLL International Conference 2010.
2. Ishihara K, Nagamachi M, Kohchi M, Ishihara S. Kansei Engineering International Journal 2012;11(4): 241-246; doi:10.5057/kei.11.241

Keywords: health & self-esteem, rehabilitation game, touch-panel anywhere, Kinect

Address: Hiroshima International University, Higashi-Hiroshima, Japan

E: k-ishiha@he.hirokoku-u.ac.jp

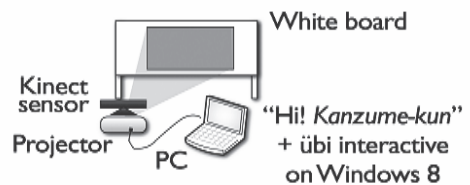


Figure 2. The system for ‘Touch-panel anywhere’



Figure 1. Screen of ‘Hi! Kanzume-kun’



Figure 3. Aged women playing ‘Hi! Kanzume-kun Touch’