

Exploring the Impacts of Field of View on 3D Game Experiences and Task Performances

Authors : Jiunde Lee, Meng-Yu Wun

Abstract : The present study attempted to explore how the range differences of 'Geometric Field of Vision' (GFOV) and differences in camera control in 3D simulation games, OMSI—The Bus Simulator of the 2013 PC version, affected players' cognitive load, anxiety, and task performances. The study employed a between-subjects factorial experimental design. A total of 80 subjects completed experiment whose data were eligible for further analysis. The results of this study showed that in the difference of field of view, players had better task performances in a spacious view. Although cognitive resources consumed more of the players' 'mental demand,' 'physical demand', and 'temporal demand', they had better performances in the experiment, and their anxiety was effectively reduced. On the other hand, in the narrow GFOV, players thought they spent more cognitive resources on 'effort' and 'frustration degree,' and had worse task performances, but it was not significant enough to reduce their anxiety. In terms of difference of camera control, players had worse performances since the fixed lens restricted their dexterous control. However, there was no significant difference in the players' subjective cognitive resources or anxiety. The results further illustrated that task performances were affected by the interaction of GFOV and camera control.

Keywords : geometric field of view, camera lens, cognitive load, anxiety

Conference Title : ICHCI 2018 : International Conference on Human-Computer Interaction

Conference Location : London, United Kingdom

Conference Dates : October 15-16, 2018